

Oh, Ranger!



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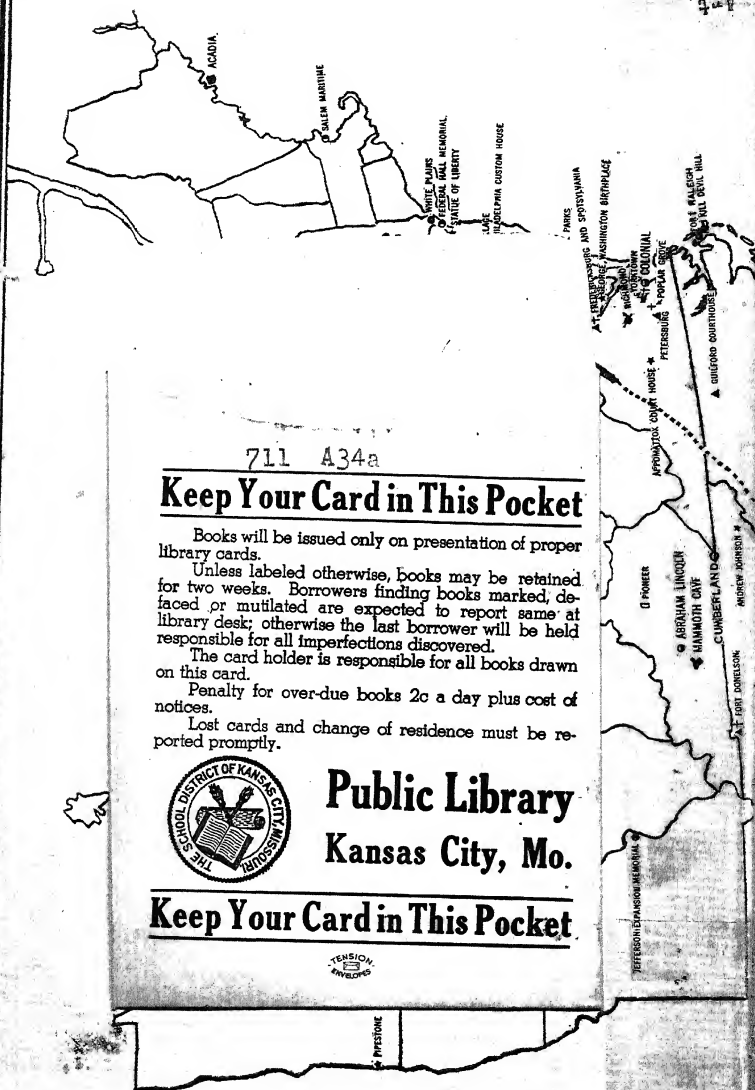


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“Oh, Ranger!”



HARRY YOUNT, OF YELLOWSTONE, THE FIRST NATIONAL PARK RANGER

"OH, RANGER!"

A Book about the National Parks

REVISED EDITION

BY

HORACE M. ALBRIGHT

AND

FRANK J. TAYLOR

ILLUSTRATED BY

RUTH TAYLOR



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DEDICATED TO
THE RANGERS
AND THEIR BELOVED FIRST CHIEF
STEPHEN TYNG MATHER

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PREFACE TO THE FOURTH EDITION

(1946)

THE satisfaction and pleasure we have had in the continuing acceptance of this book by visitors to the national parks and related preserves, both scenic and historic, have prompted us to attempt a thorough revision for those who will travel about our country in the post war era.

Since the revision in the early thirties, the growth of interest in the conservation of natural resources, including national park features, has been phenomenal. There have been important extensions of park reservations, and many new ones have been added to the system. Thus the editing we have undertaken has had to be extensive. The new book, therefore, contains much information not included in earlier editions, and the arrangement of factual data has been changed to make it more easily available to those who would use the volume for reference purposes in planning trips. This has been done we hope without sacrificing in any respect the prime objective of "Oh, Ranger!"—to preserve for the traveler some of the atmosphere of the wild places, the old places, the frontiers which have long beckoned so many folks to the parks for their summer vacations.

We appreciate the many understanding friends the book has made for the National Park Service and for us. We hope this new work which our publishers have produced will bring equally gratifying results.

H.M.A.
F.J.T.

A WORD OF INTRODUCTION

(From the first edition of "Oh, Ranger!")

To me no picture of the national parks is complete unless it includes the rangers, the "Dudes," the "Sagebrushers," and the "Savages." I like to picture the thousands of people gathered about the park campfires, asking questions of the rangers. In fact, I like to be at the campfire myself, and listen to the thousands of questions asked about the parks and their wild life. Especially am I interested in the replies of the rangers. These men have become keen students of human nature. In their brief, informal talks, they have learned to anticipate many of the questions of the visitors.

I like the idea of this book, "Oh, Ranger!" It tells the story of the parks in the simple, informal style of the rangers. It gives the rangers the credit due them for their fine work in guarding the national parks and preserving them in their primeval beauty. It breathes the spirit of the people who belong to the parks, who make possible the parks as they are today.

They are a fine, earnest, intelligent, and public-spirited body of men, the rangers. Though small in number, their influence is large. Many and long are the duties heaped upon their shoulders. If a trail is to be blazed, it is "send a ranger." If an animal is floundering in the snow, a ranger is sent to pull him out; if a bear is in the hotel, if a fire threatens a forest, if someone is to be saved, it is "send a ranger." If a Dude wants to know the why of Nature's

ways, if a Sagebrusher is puzzled about a road, his first thought is, "ask a ranger." Everything the ranger knows, he will tell you, except about himself. Now "Oh, Ranger!" tells you about him.

The national parks are more than the storehouses of Nature's rarest treasures. They are the playlands of the people, wonderlands easily accessible to the rich and the humble alike. They are great out-of-doors recreation grounds, where men, women, and children can forget the cares and the sounds of the cities for a few days. The serenity of the mountains and the forests is contagious. With almost four million Americans under the spell of the unspoiled wilderness of the national parks each year, if only for a short time, they are a powerful influence in our national life. It has been the particular joy of my work as Director of the National Park Service to tell the people about their parks, to urge them to see their wonders. The whole purpose of Congress in creating the national park system was that the American people might enjoy them and benefit by them forever.

So I am glad of the opportunity to write this short introduction to "Oh, Ranger!" which tells the story of the parks in a new and interesting way, and to say a word about its authors. Horace M. Albright has served the national parks since the service was organized, as superintendent of Yellowstone National Park and field director of the National Park Service. He is an indefatigable worker, a true lover of the mountains. He knows the rangers and undoubtedly knows the parks better than any other man in the service. Frank J. Taylor has been a friend of the parks for many years, as newspaperman and writer. He, too, has spent much time in the Parks and has helped

bring their possibilities to the attention of the people. It is a happy circumstance that two men who themselves have the genuine spirit of the rangers and who are so intimately informed in the affairs of the parks and their people should have collaborated to produce this book.

STEPHEN T. MATHER

Director (1917-1929), The National Park Service

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“Oh, Ranger!”

"OH, RANGER!"

"OH, Ranger, can I take your picture with a bear?"

"Just a minute, ma'am, until I show this gentleman where to go fishing."

"Where's a bear, now?"

"Well, ma'am, there was one in these woods an hour ago. Maybe we can find him."

Five minutes devoted to the finding of a wild bear.



"Oh, Ranger, that's a lovely bear! Stand closer to him, won't you? Would you mind putting your arm around him? It would make a peachy picture. We'd just love it."

"Sorry, ma'am, but it's against regulations to hug the bears."

"Oh, pshaw! Why do they have such foolish regulations? Well, just pretend to be feeding him something."

Knowing the ways of bears, the ranger declined to "pretend." He produced some molasses chews and actually tossed the food to the bear. It is dangerous business to try to fool a bear about food, and he should never be fed from the hand.

Click! Click! Click!

Another ranger was immortalized in picture, for the ninetyeth time that day.

"It's all in the day's work," explained the ranger.

"What else do you do?"

"Well, show folks where to camp, and how to keep on the right road, and answer questions, and see that people don't tease the animals, and keep things orderly, and put out forest fires, and give lectures on Nature, and rescue Dudes in danger, and 'most anything anybody wants done around here."

"All in a day's work." That whimsical line was written at the top of a report turned in one day by Ranger John Wegner, now Chief Ranger of Sequoia, which read as follows:

"I got phone orders at Tuolumne Meadows to pack up and come in over Sunrise Trail. Started at sunset. Everything haywire, including cranky pack horse which kept getting off trail. Phoned in at Vernal Falls station. Ordered to hurry down, help catch two auto thieves which broke jail just after breakfast. Assigned to guard Coulterville Road. Only transportation was Chief's personal auto which I could have if I could find man who borrowed it from Chief. Chief didn't know who that was. Guarded Coulterville

Road until 3:00 A.M., when ordered to Valley to beat brush by the river with flashlight to locate thieves. Found one thief and captured him just before dawn. Somebody else assigned to guard him. Before I turned in, got orders to meet carload of trout fry at El Portal and help plant them in streams. Met fish

O.K., but coming up El Portal Road, Quad truck slipped over side of road, but was saved from going down cliff by



being caught in tree. Cans of fish lashed to truck, so we saved them. Job was complicated by necessity of keeping water aerated in cans setting by roadside while we rushed more water in small bucket from stream quarter of mile away. Fish all saved. Phoned for help, and kept water in cans moving until truck dragged back on road and fish cans reloaded. Relieved of duty, with nothing to do but walk nine miles and go to bed."

"All in a day's work" can be almost anything for a national park ranger. One day, at the end of a long battle for control of a forest fire, former Superintendent "Dusty" Lewis of Yosemite was making a final inspection before telling the last ranger on the job to go to his cabin and turn in for much-needed sleep. Every blaze



was out except a small flicker in an old tree trunk, dead but still standing. It looked safe enough, but the rangers hesitated to leave before it was entirely out, for fear that a sudden breeze might rekindle the forest fire. The blaze was too high to reach with wet sacks or dirt thrown by a shovel, or by water thrown from a bucket. The tree was too large to be cut down without help, and Lewis hesitated to call back his already exhausted rangers. He scratched his head and puzzled over the engineering problem of snuffing out that small blaze, well out of reach. Then he and the ranger scouted for a spring. Finding one, they made a lot of mud balls and carried them in their hats to a point near the burning tree. Both had been base-

ball players in their younger days, and as Lewis afterward said, "The old soup-bones were still in fair shape." Cheering each other's pitching, they heaved mud balls and plastered the tree trunk until the last "strike" smacked out the last flickering blaze.

To the four million visitors who enjoy the national parks each year, everyone in the olive drab uniform is a ranger. "Oh, Ranger!" is the almost universal greeting preliminary to asking questions about the park and its life. But within the ranger service there are various designations, ranging from Superintendents down to Ninety-Day-Wonders. In a broad, general way, all rangers are divided into two groups: Old-Timers and Ninety-Day-Wonders. The Old-Timers are the permanent rangers, serving the year around, year in and year out. The Ninety-Day-Wonders are temporary rangers, signed on for the summer rush period of three or four months, when the travel to the national parks nears the seven-million mark.

The Old-Timers are, of course, the backbone of the ranger service. In the summer months, they are in command at the various ranger stations, assisted by the Ninety-Day-Wonders in the task of registering visitors, directing them to camps and lodges, helping them find fishing holes, or campsites, or wood, or what not, and in answering the millions of questions about the parks. The Ninety-Day-Wonders are mostly college men, with enough love for the out-of-doors to enlist for a summer of hard work in the national parks. They are a keen and resourceful group of men and what they don't know about the great open spaces after a week in a national park they manage to hide behind an air of great sagacity. The majority of these lads return to college work at the end of summer, but a few of them suc-

cumb to the spell of the mountains and eventually become permanent rangers.

The Old-Timers, particularly the veterans in the ranger service, were born men of the mountains, gifted with a working knowledge of woodcraft, of trail-blazing, of the ways of wild life, and with sufficient instinctive resourcefulness in the mountains and the forest to be able to take care of themselves and others under any circumstances. They were practical naturalists, and knew enough practical psychology to handle people in numbers. They



served as guides, philosophers, and friends. That seems like an imposing list of qualifications, yet the Old-Timers measured up to them. The younger generation of permanent rangers are largely college men, attracted to the Parks by summer work. After serving first as Ninety-Day-Wonders, they graduated to the status of Old-Timers. Most of them have developed the self-sufficiency of the typical Old-Timers. The mountains put their mark on men. It shows in their faces, in their actions. The mountains make men able to stand solitude—it takes an unusual character for a man to be good company for himself in a lonely ranger station, banked high with snow, for months on end during the winter. Just try living alone for a hundred days at a stretch!

Strangely enough, these are the months that the rangers like best. Out near the mountain tops, with snow piled from five to forty feet in drifts, they lead their lone existence, patrolling their vast domains as large almost as some eastern

states, traveling on skis and snowshoes, repairing telephone lines, protecting wild animals from poachers, maintaining the peace of the wilderness through storm and blizzard. For as long as six months at a time, winter holds certain of the national parks in her icy grip, with weather below zero, with freezing winds, blizzards, and snowstorms alternating around the tiny log fortresses, the cabins, from which the rangers make their patrols. During those long, cold winter months, the higher levels of the parks are closed to travel, and the ranger's job is to see that his charges in the great wild-life sanctuary are protected, both from humans and from the elements. It takes men of great courage, stamina, and endurance for this most difficult work.

On winter patrol, the Old-Timers must be able to endure such privation as was faced by Ranger Liek, who was lost for twenty hours in a raging blizzard while returning on snowshoes from Upper Yellowstone. For hours on end the storm raged, destroying every sign by which the ranger could find his trail. Only by keeping on doggedly could he avoid freezing to death. It was, of course, impossible to build a fire in the blizzard. He crossed his own tracks many times, and was hopelessly lost when he came finally to a shoreline which he recognized as Yellowstone Lake. He must have traveled at least forty miles in covering a distance of twelve miles, before he reached an emergency ranger station. A man of less rugged character and physique would have succumbed to the elements in that struggle.

"It's all in the day's work," says the ranger.

Whenever possible, two rangers patrol together in the deep snow country, so that if one is hurt or taken ill, the other can render aid or go for help. In the northern national

parks, great precautions must be taken to protect the rangers during the winter. The ranger stations are about twenty miles apart; in no case more than thirty miles apart. Between each station, there are snowshoe cabins, which are rationed in the fall and are equipped with bedding and wood and kindling. Sometimes these cabins are completely obliterated beneath the snow. To provide landmarks by which to locate the cabins, the rangers often put up many extra feet of stovepipe or hang a shovel in a tree top nearby. One time, looking over a report of a ranger's patrol, a park superintendent noticed this item: "Ate lunch on top of a telephone pole just east of Sylvan Pass."

The snow must have been more than twenty feet deep up there and the tip of the pole was probably the only place he could sit down to lunch. There are times when the snow is forty feet deep in Sylvan Pass, and not even the telephone poles nor the tree tops are visible in places. It is hard for the summer-time visitor, who sees Yellowstone or Glacier or the other parks only in the height of the season when the summer is balmy and the roads are good, to picture the complete isolation of the ranger stations in dead of winter when the snowdrifts hide even the two-storied cabins. It takes genuine devotion to the mountains to prompt men to make these lonely cabins their homes during the long winter months.



Ranger Joe Douglas was crossing Yellowstone Lake on skis in the dead of winter. He came to a place where the

snow was blown off the ice. Skis are of no use on the ice, so Doug unstrapped them and carried them over his shoulders



while he walked across the ice. In an unwary moment, he plunged through an air-hole into the icy water. The skis bridged the hole and undoubtedly saved his life. Clinging to them, Doug cautiously pulled himself from the water and trudged on, his wet clothes frozen stiff about his body. Reaching the shore,

he dug through four feet of snow, located some wood, built a fire, undressed, and stood there naked while his clothes dried by the blaze.

"It's a wonder you didn't freeze, Doug," someone said, when the ranger told his story.

"Naw, it wasn't cold," he retorted. "It was one of the warmest days of the winter—only 'bout seven below zero!"

To the public, the ranger is one of the most romantic figures in life. The name "ranger" probably originated in England. In Colonial Virginia rangers were authorized by the House of Burgesses to protect the early settlements. In the French and Indian War, Roger's Rangers were a fiercely effective body of hardy New England fighters. Later in the West there were other rangers, always on the frontier, and of these the Texas Rangers are still active. In the midst of World War II, we trained the Army Rangers who were the American version of the British Commandos. Then, of course, we have the New York Rangers hockey team and the radio "Lone Ranger" who always fights on the side of right and justice.

The first national park ranger, so far as is known, was old Harry Yount, government gamekeeper, who remained all winter long in Yellowstone Park in 1880, to keep poachers from the territory. He was the first man to weather a winter in Yellowstone. After that first winter alone, with only the geysers, the elk and the other animals for company, Harry Yount pointed out in a report that it was impossible for one man to patrol the park. He urged the formation of a protective force, large enough to cover this vast region. So Harry Yount is credited with being the father of the ranger service.

In the public mind, there is little difference between national forest rangers and national park rangers. The two groups do have much in common, such as protection of the forests from fire, construction of trails and telephone lines, planting of fish in lakes and streams, and preservation of the wilderness under their charge. The differences in their duties arise out of the fact that they are employed by different bureaus in different departments of the federal government. The park rangers are employed by the Department of the Interior, the forest rangers by the Department of Agriculture.

The national forest rangers are intrusted with the administration of a vast area of forest land, a territory fifteen times as great as that of all the national parks together. Their duty is to see that timber is not cut until it is fully grown, that slashings are burned, and that new forest growths are protected. They have under their charge much grazing land on which live stock is pastured under permit from the government. The national forest areas include many reservoir and power sites and the forest rangers supervise their utilization under the Federal Power Commission's authority. In brief, the forest ranger is charged

with administration of an area which must produce the best possible crop of timber, grass, and water power. The national forests are maintained partially at least for commercial reasons, and the forest ranger must look at them from an economic point of view, though they are also sanctuaries of wild life and open to the public for recreation, as a secondary consideration.

The national parks, on the other hand, were set aside to preserve the natural wonders in them, and the rangers' duty is to protect the features and resources of the parks in their natural state, and see that they are accessible to the public. The only economic developments allowed in the national parks are those for the convenience and service of visitors. No hunting is allowed in the parks. The national park ranger is custodian of a great natural museum through which he must guide tens of thousands of visitors each year. He must tell them about the parks, see that facilities are provided for their comfort, pleasure, and entertainment. The national park ranger must be more than a skilled mountaineer and woodsman; he must have the ability to establish and maintain close contacts with the public, during the summer months at least, and then must turn to his task of protecting the wild life during the wintertime.

In old Harry Yount's day it was enough if a ranger could maintain order in the park and protect the wild life. Today that is but the beginning of his job. The ranger must be a guide and an interpreter of the mountains and their moods and mysteries. He must be a practical naturalist, and a friend and counselor to visitors. He may be entertaining a reigning prince one day and fighting a forest fire the next. He must be tactful, courteous, and ever patient,

even when ridiculous and foolish situations are provoked by visitors.

Ranger Martindale was giving an informal talk to a group of delegates to a religious convention, gathered about the cone of Old Faithful Geyser. The ranger had just explained how the cone had been formed over a long period of years by deposits from the hot water when he was interrupted peremptorily.

"Ranger, how long did you say it took to make this cone?"

"About forty thousand years," Martindale told the questioner.

"Young man, do you ever read your Bible?"

"Yes, sometimes."

"Then you know that the world is not yet forty thousand years old, nor a half, nor a quarter of that."

"But we have measured the annual deposit on this cone and we can calculate how long it took to build it up as it is," said the ranger.

"Well, if you had read your Bible more carefully, you would know that it took the Lord only six days to make the whole world," asserted the visitor decisively. "If He wanted to, I guess He could make ten Yellowstones in ten minutes!"

With that the visitor strode off.

Sometimes a joke will save the day. Sometimes, though, the wise-crack makes trouble. There was the old lady who asked a driver why the great piles of wood were stacked along the road near Old Faithful.

"That's to heat the water for the geysers," he said, without batting an eye.

The old lady came in to see the superintendent when she

reached Mammoth, where the office is located, to protest against deceiving people about the geysers. It was with difficulty that he persuaded her that the wood was cut to heat water for the hotel boilers.

The rangers have learned that the public takes the wonders of Nature so seriously that it is not good policy to joke about them. It is hard enough to persuade people to believe the truth. There is a pine tree growing in a cleft in the side of El Capitan, a massive rock rising sheer for more than half a mile above the floor of Yosemite Valley. The height of El Capitan itself is difficult for people to grasp. This tree, perched on a shelf about a third of the way up, is eighty feet tall. It looks to be about eight feet high, at the most. The superintendent of Yosemite has had to bring out surveyors' calculations more than once to prove to visitors that they are not being deceived by rangers or guides.

There is the tale of the peanut tree of Mount Rainier National Park. Guides would point out a certain pine tree near Paradise Valley and sure enough there were peanuts sticking in the clusters of pine needles. A family of squirrels, if not frightened by too many visitors, usually spoiled his story. Their chief ambition in life, apparently, was to carry peanuts, provided by friendly rangers, to the limbs of the tree, where the nuts remained until the wind or the birds jarred them loose, whereupon the squirrels tackled



their job of re-peanutting the pine tree all over again.

Among themselves and their friends, the rangers are great story tellers, especially when they start telling "whoppers." Sometimes their stories are marvels of inventions, as, for instance, this one told by a Glacier Old-Timer.

A ranger doing patrol duty on the boundary line, having run out of supplies and being in immediate danger of starving, told how he grabbed his trusty old gun for which only one shell remained, and, going beyond the park line, maneuvered around carefully, hunting diligently so as to be sure to get the best possible results with the one shot. Finally he came upon a brace of quail perched in a cluster of brush close enough together for both to be bagged at one shot. Carefully raising the gun, he fired. Imagine his great joy when on running to the spot to pick up his two quail he found that he had killed six more, which were on the other side of the bush and which he had not seen. Hearing a great commotion out in a small lake near by, he saw a big buck deer that had become frightened at the sound of his shot and had run out into the lake and bogged down in the mud. Dropping the quail, he hurried out into the lake and cut the buck's throat. In carrying the deer out, he sank down into the mud himself up over his boot tops. Upon reaching the shore, he sat down and pulled the boots off to pour out the water and found in them a dozen nice fish. Placing the quail, fish, and deer together so that they could be more easily carried, he was struggling to get the load on his shoulders. This put a great strain on his suspender buttons, and one of these flew off with such force that it killed a rabbit a hundred yards in the rear.

Kings, queens, princes, presidents, they are all the same to the Old-Timer. Sometimes it is difficult for these men of

the mountains to observe the amenities of courts and capitals. There was the occasion of the visit of the King of Belgium to Yosemite National Park. Ranger Billy Nelson, a seasoned Old-Timer if there ever was one, was detailed to accompany the King, to act as guide and guardian.

Billy did not relish the job. He had no genuine objection to kings, as such, but he feared talking with them. He isn't much of a talker anyway. The superintendent coached Billy on how to address the King and the Queen and what to say to be polite. Billy rehearsed it, scratched his old head, and allowed that he would rather fight a forest fire. He met the King out under the giant sequoias of the Mariposa Grove, and this is about the conversation that ensued:

"They told me what to say to you, King," he said, "but I've forgot it, so if it is agreeable to you, I wish you'd call me Billy and I'll call you King."

"All right," said the King, "I'll call you Billy."

"All right, King," said Billy.

They got along famously on those terms and became fast friends during the King's stay in Yosemite. Billy has the reputation for being about the best camp cook in the whole ranger service, and any time he wanted a reference he could name the King of Belgium. Billy was camp cook by special appointment to His Majesty. As such he took full advantage of his rights and prerogatives and once other members of the royal party were horrified to hear Billy call out:

"Say, King, shoot me that side of bacon, will you?"

Another royal visitor who enjoyed his adventures with the ranger service was Crown Prince Gustav Adolf of Sweden. The Prince is an experienced woodsman and a great trout fisherman. Since he seemed to have the required qualifications, it was decided to make him an honorary ranger.

He was delighted with the honor and wore his badge on his tunic for the rest of the trip. His outing costume was not unlike that of a park service ranger, and this led to an amusing incident when the Crown Prince arrived at the North Rim of the Grand Canyon of Arizona.

The party came by automobile, reaching the destination an hour or so before Ranger Frank Winess, in charge of the station, expected them. As the machine drew up, Winess stepped out, greeted the driver, exchanged a few pleasantries, and then spotted the ranger's badge on the Prince's breast.

"Hullo," he said, extending his hand. "My name is Winess. What park are you from?"

When it was explained that the new ranger was the Crown Prince of Sweden, it took Winess the rest of the day to remember even the first line of the speech he had prepared to welcome the royal visitor to the Grand Canyon!

One day the Crown Prince went fishing with Chief Ranger Sam Woodring at Peale Island in Yellowstone Lake. After a good day, in which the Prince caught his limit, the party made ready to leave. Observing the rangers cutting wood near the cabin used as a headquarters for fishing parties, the Prince inquired the purpose of the wood. He was told that it was the practice in the mountains never to leave a cabin without wood, and that those in the cabin were supposed to replenish the supply for the next occu-



pants, who might possibly arrive in the night or in distress.

"All right," he said, "since I have enjoyed the hospitality of the cabin I will insist upon cutting my share of the wood."

Which he did.

There are times, however, when visiting celebrities are a bit unwilling to obey the rules of the ranger service. The rangers enforce one rule which says that no names shall be written on the cones of the geysers in Yellowstone. It is hard to understand why anyone should want to disfigure a marvel of Nature by writing his name upon it, but the old saying that "fools' names and fools' faces, are often found in public places," holds good for the wilderness, too.

One day a local celebrity from an eastern city was smitten with the urge to write his name upon the cone of Old Faithful, a place where the name would endure for several years before the geyser could eliminate it by natural processes. This man was caught red-handed by a ranger who arrested him. He was offered the choice of mixing up some



soapsuds and scrubbing the name off the cone or going before the United States Commissioner for prosecution. He sputtered considerably about his rights, but finally decided to use the soapsuds, influenced largely by the fact that if he appeared before the judge and

were fined, his name would be in the papers and he would become celebrated in a manner that did not appeal to him. Nevertheless, it was humiliating to have to scrub a geyser

cone before a large and not too friendly audience, and before the job was done he was angry all through. He came to headquarters to protest about the tyranny of the rangers.

"It's about what you'd expect from these rangers," he said. "They're the dregs from the cities, out here in the mountains because they couldn't make a living anywhere else."

"Yes, I guess that's it," said the assistant superintendent, dryly. "That ranger who made you wash the geyser never had a chance. He's nothing but a grandson, and a great-grandson of two presidents of the United States."

The ranger was William Henry Harrison III, a Ninety-Day-Wonder for the third consecutive summer.

Of course, not many rangers can claim the distinctive background of Ranger Harrison. They don't need to. It is not his distinguished forbears that made Harrison one of our best rangers, but his willingness to work, his devotion to duty, and his resourcefulness. The first requisite of a good ranger is that he be a gentleman, which hasn't anything to do with his birth or his family connections, but much to do with his manner toward his fellow-men. As a matter of fact, many of the Old-Timers are men who have worked their way up through the ranks without the benefit of education other than that which they have received in the mountains and the forests.

A remarkable ranger was the late Sam Woodring, former chief ranger of Yellowstone, and subsequently superintendent of Grand Teton, just south of Yellowstone. Woodring was an old army packer. For years his job was to get supplies through to outlying stations in the Philippines. He was a packmaster on the Mexican border for General Pershing, and was at Vera Cruz with General

Funston. He came into Yellowstone from the army in 1920 and joined the ranger force. He had had charge of the army pack train in the park in 1915 and 1916. He had been in charge of the pack train organized for President Roosevelt when "T.R." was hunting wolves in Texas. Roosevelt was but one of many notables with whom Woodring became fast friends while out on the trail in the wilds. Two other presidents who intrusted themselves to his care while out in the mountains were Warren G. Harding and Calvin Coolidge. The Chief made some remarkable winter scouting trips in his day, and his life was a round of adventure. In 1926 he went to Glacier National Park to help gain control of a raging forest fire near Lake McDonald. In the dense forest, Woodring and his rangers and their squads were unable to see the fire, as a high wind whipped the smoke through the valley. For hours they were given up for lost, as they worked to backfire a break against the oncoming flames. It was not until the next day that they discovered that the flames had leaped over their heads, above the tree tops, while they were battling in the smoke near the ground.

The oldest Old-Timer for many years in the service was Jim McBride, of Yellowstone. Ranger McBride first came to the park before there were any rangers, as a driver for a quartermaster wagon. He learned the roads and trails of the park as a wagoner and mule skinner. In those days they had a different company of soldiers in the park almost every summer, and it was necessary to maintain a small force of guides or scouts to show the new troopers to their posts and to keep them from getting lost. These scouts were really the forerunners of the rangers and were indeed the first park rangers. They fought off the poachers and tried

to protect the wild life of the park. Jim was one of these Old-Timers, so long in the service that he is a personification of the name by which we call the permanent rangers.

There were picturesque and interesting events in the lives of those early rangers, as Jim could tell. There were stage robbers to be captured and buffalo poachers to be caught and brought to justice. One of Jim's most notable adventures was the capture of notorious Ed Howell, the buffalo poacher. Howell was caught by Scout Burgess and two assistants in the act of skinning a buffalo on a remote tributary of the Yellowstone River, in the dead of winter. Remember, rangers were called scouts in those days. Howell had several buffalo hides in his camp. After capturing him, the rangers were unable to bring about his punishment because of inadequate laws. The story of the catching of this notorious poacher and his escape from punishment caused great public indignation and undoubtedly had much to do with the passage by Congress of more stringent laws for the protection of the buffalo.

Jim McBride was assigned one time to track down a robber who had pulled off a sensational hold-up of stage-coach passengers in the park. He nabbed a bad man suspected of being the robber in a remote part of the park, and had to bring the rascal in alone. It was a trip of several days, and one night the fellow managed to loosen the ropes with which Jim had bound him. Jim awoke at daybreak just in time to see the former prisoner approaching him with an axe in his hand. When asked what he said to the alleged bandit, Jim replied:

"I said, 'Good morning, when did you wake up?' "

He recaptured the man and brought him to headquarters.

Risking his life to save that of another is something that

every ranger must be ready to do, any time he is called upon. Visitors to the national parks unfamiliar with trails and with mountain climbing often overestimate their endurance or their ability to find their way through the forests. The Yosemite National Park ranger force holds the record for the number of rescues effected along trails, for the reason that travelers in that park are more prone to strike out alone. Not that hiking over the trails is unsafe, for the contrary is true and thousands upon thousands of people hike safely over park trails each summer without guides. There are more than six hundred miles of trails in Yosemite National Park alone. One would think that would be mileage enough for any hiker for one season, but every year a few visitors insist upon blazing their own trails and consequently become lost. Former Chief Ranger Forest Townsley, a giant in stature and a man of great courage, lowered himself dozens of times down precipitous cliffs hand over hand to tie a lost hiker securely so that the rangers above could drag him to safety.

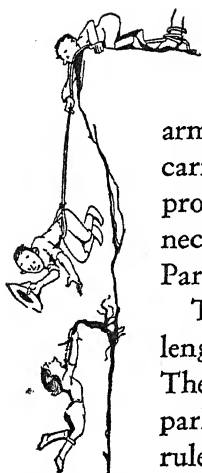
One of the most daring rescues in park history was made in the Grand Canyon of the Yellowstone. Two boys employed by the hotel at the Canyon undertook to reach the base of the lower falls on the north side. This slope is so steep that it is practically impossible to scale it, and the pair found themselves helpless at the bottom of the Canyon, nearly half a mile deep, with the raging river on one side of them and the precipitous cliff on the other. They were seen by some tourists who reported their plight to the rangers. One lad was able to climb to a point where he could reach a rope and be pulled to safety. The other boy fell thirty feet while scaling the wall, cut a deep gash in his hip and suffered many abrasions of the body. He lay

in the heavy cold mist from the falls, exhausted and chilled, unable to reach the ropes thrown to him. Ranger Ross finally lowered Ranger Kell, his assistant in summer and a Yale varsity football star in the fall, and Remus Allen, a hotel employee, down into the Canyon at a point below the falls. They worked their way up the gorge, sometimes wading through the roaring river. They finally reached the wounded boy, rendered first aid, and dragged him perilously across loose rock and shale to within 50 feet of the top of the Canyon, where they could reach a rope lowered by Ross and his assistants. It took four hours for them to make the rescue, once they were lowered into the Canyon, and all of that time they were in danger of slipping into the plunging river below, in which case their lives would virtually have been thrown away.

In that as in most cases the victims had no business getting lost. But once their lives are in danger, there is nothing for the rangers to do but risk their own to save the others. That is part of every ranger's duty.

The rangers of Mesa Verde National Park tell of a rescue achieved by one of their number of a woman described as "a bachelor girl of indeterminate age." This girl became panic-stricken while ascending the trail from the Square Tower House, reached by ancient foot holes carved in the rock by the Cliff Dwellers. For safety's sake, a rope is in position to assist the climber in pulling himself up. The climb is not a difficult one for a normal person, but this girl, becoming semi-hysterical, planted her feet in two of the holes and clung on to the rope for dear life, screaming for help. She ignored the ranger's assurance that she was in no danger, and refused to budge.

Finally he went down to rescue her. Finding both hands



and both feet busy holding on, when the ranger reached her the woman reached over and planted her teeth in the rescuer's arm. She kept them there while he gallantly carried her to the top of the climb, despite his protests that the tooth-hold was painful, unnecessary, and against the rules of the National Park Service ranger force.

The National Park Service goes to great lengths to warn visitors against taking chances. They present every arrival in the national parks with a manual explaining the simple rules and regulations. These are three in purpose: first, to preserve the natural state and the wild life of the parks; second, to protect the lives and persons of visitors; and finally, to assure everyone an equal opportunity to enjoy the wonders and the advantages of the national parks. The rangers are often asked why they take the trouble to register the names and addresses of visitors to the parks. That is a large job in itself and is not required in some parks where travel is very heavy. Often it is resented by visitors who like to travel incognito. That registration is for the protection of visitors, for the purpose of knowing how to reach them in case of emergency, and finally to catch criminals or other undesirables who may take to the national parks as a refuge.

In some parks winter patrolling introduces an added element of sport into the lives of the rangers. Shooting the predatory coyotes occupies part of the winter time of the rangers of Yellowstone and Glacier in particular. One of the Yellowstone rangers, Ted Ogston, now Chief Ranger in Death Valley, counted the winter lost when he could not ac-

count for one hundred coyotes, at least. Even coyotes are only killed in the national parks when they become so numerous as to menace more valuable species of wild life—animals more likely to be seen and enjoyed by visitors, or rare animals which require unusual protection lest they be exterminated. The ranger's job is to help nature maintain the proper balance. Sometimes he has to fight the predatory animals—sometimes he must favor them.

The most dangerous of the predatory beasts is the mountain lion. These great cats, sometimes measuring twelve feet from nose to tip of tail, are cruelly destructive of deer and antelope. As a rule, they eat only hot, fresh flesh of newly killed animals, generally making but one meal off each kill. Their practice is to disembowel their victims, feed on the warm flesh, and leave the greater part of the carcass untouched, although they occasionally bury the remains to eat later. However, they prefer to kill another deer or antelope rather than eat flesh that is cold. Mountain lions and wolves are not numerous in the national parks, and have not been hunted by rangers for many years.

Two Yosemite rangers, whose dogs cornered a lion in a tree one winter, tell of the fight that ensued. The dogs surrounded the base of the tree, barking. As the top swayed in the wind, the big cat snarled and threatened to leap upon his pursuers. Two shots rang out. Both were effective. The great cat snarled and hissed, leered at his enemies, then plunged, claws outspread, straight down upon them. The rangers barely escaped from the spot where the lion plunged into the snow. A young and inexperienced dog charged too near the wounded beast. The great jaws snapped, the lion shuddered and died with his teeth gripping the dog's snout like a steel vise. The rangers had to

pry the jaws loose to release the unfortunate canine. His nostrils were pierced by two great teeth. It was a year before that dog was any good.

Everybody who lives in a national park is fascinated



with the wild animals and wants to make pets out of them. In every park there are ranger stations with special pets. It may be a deer, an antelope, a woodchuck, or even a badger. Squirrels, chipmunks, and other smaller animals are common pets. Occasionally a ranger will tame a

family of skunks, and a ranger of Sequoia Park had a family of foxes eating out of his hand. One winter the rangers at Lake station tamed a pine marten. This group also let a skunk family live under the ranger station all spring without molesting them, and the skunks never bothered the rangers. Finally, one skunk died and the whole family had to be persuaded to stay away while the floor was torn up to get out the body of the deceased. It is now believed by all rangers that it is unwise to make pets out of skunks!

"All in a day's work." That recalls a bit of amateur poetry found in one of the ranger cabins in El Dorado National Forest not long ago:

The season's over and they come down
From the ranger stations to the nearest town
Wild and woolly and tired and lame
From playing the "next to Nature" game.
These are the men the nation must pay

For "doing nothing," the town folks say.
 But facts are different. I'm here to tell
 That some of their trails run right through—well,
 Woods and mountains and deserts and brush.
 They are always going and always rush.
 They camp at some mountain meadow at night
 And dine on a can of "Rangers' Delight," *
 Get up in the morning when the robins sing
 And break their fast at a nearby spring,
 And then they start for another day
 With corners to hunt and land to survey.
 That trouble settled they start for more,
 They're never done till the season is o'er.
 They build cabins and fences and telephone lines,
 Head off the homesteaders and keep out the mines.
 There's a telephone call, there's a fire to fight;
 The rangers are there both day and night.
 Oh, the ranger's life is full of joys,
 And they're all good, jolly, care-free boys,
 And in wealth they are sure to roll and reek,
 For a ranger can live on one meal a week.

* "Rangers' Delight"—canned tomatoes.

DUDES AND SAGEBRUSHERS

IN the early days, all visitors to the national parks were divided into two kinds, "Dudes" and "Sagebrushers."

Dudes were those who traveled by train and motor stage.

Sagebrushers were those who rolled their own cars over the mountains.

In more recent years, with the tremendous increase in motor travel to the Parks, "Dude" has come to mean anyone who stopped at the hotels or lodges. The campers are still called "Sagebrushers."

The term "Dude" originated years ago in the ranch country of North Dakota and Wyoming and was early adopted in Yellowstone Park. In those days the tourist who could afford the luxury of train travel was considered a person of some means. He wore his good clothes, at least until he reached the ranch or the park, and even then he was accused of being finicky. To the old-time horse wranglers on the ranches and to the old stagecoach drivers the infallible test of a Dude was to look behind his ears. Dudes invariably washed behind the ears even when they were roughing it. Try as he might to dress as a ranch hand and look like a regular wrangler, the Dude always gave himself away by some little foible such as this.

From a term of derision, the title "Dude" has grown in a quarter of a century to become one of distinction. At first it was used only by the help in the parks. Later Dudes began calling each other Dudes and were proud of it. The popularity of the western Dude Ranches as a headquarters

for summer vacationists has helped to make the nickname popular. From the Yellowstone, the term spread to the other national parks, with certain variations. In all the parks the Dude is the visitor who stops at either the hotels or the lodges. Actually, a visitor's social standing or wealth or taste have nothing to do with his rating in a park. A Dude is a Dude and a Sagebrusher is a Sagebrusher. The latter may own the First National Bank in his own home town and arrive in the finest automobile, driven by a liveried chauffeur, but as soon as he crosses the park boundary he is a Sagebrusher, even if he chooses to camp out.



Nicknaming of people in the national parks does not stop with the visitors. The hired help are called "Savages." They fall into several groups. The dishwashers are called "Pearl Divers." The waitresses are called "Heavers." Tent girls and chambermaids are known as "Pillow Punchers." Chauffeurs are "Gearjammers" or just plain "'Jammers." Laundry girls are "Bubble Queens." Porters and bellboys are "Pack Rats" or merely "Rats." When a young man and a young woman step out in the evening for a stroll, they are said to be "rotten-logging," in the vernacular, whether or not they surrender to the temptation of sitting out a few dances on a nice soft decaying log. Much of the help in the hotels, lodges, and camps of the parks is recruited from colleges. One of the great charms of life in the parks is the vivacity and enthusiasm of these collegiate "Savages."

Many of them choose a different park each summer. In most of the parks they are selected not only for their willingness to work, but also for their ability to entertain camp visitors with songs, skits, and programs.

Counting Dudes, Sagebrushers, and Savages alike, the total number of visitors to the national parks alone each year except in recent war years is approximately six million. That astounding total makes the parks the greatest tourist attraction of the United States, and possibly in the world. In fact, it has been said that the trek to the national parks each season is the greatest migration of all time, greater than the Gold Rush of 'Forty-nine or the invasion of Europe by Attila and his Huns. Rocky Mountain National Park for many years held the lead in number of visitors, then phenomenal increase in travel to Yosemite gave that park undisputed leadership in popularity, surpassed only recently by Great Smoky Mountains and Shenandoah and some of the historical parks in the East. Yellowstone, Rocky Mountain, Mount Rainier, Grand Canyon, and Hot Springs Parks are now visited by upward of a half million people each year. Crater Lake, Sequoia, Glacier, Zion, and other parks are each sought yearly by hundreds of thousands.

The majority of the Sagebrushers bring their own camping equipment and stop over whenever a mountain, a forest, or a fishing stream appeals to their fancy. They move on only when the spirit stirs them, some lingering all summer long in the mountains, where the air is clear, the mornings crisp, the sky blue, broken only by the clouds that drift lazily by. They delight in roughing it de luxe, in wearing khaki and knickers and boots and sweaters, either about their own campfires or at some rustic established camp where food and warmth and shelter are available at a cost

so low that it is cheaper than staying at home.

Traveling through the national parks on de luxe stages is comfort itself nowadays. But before the coming of the automobile, it was an experience enjoyed only by the more adventurous spirits. The trip to Yosemite on the Cannonball Express, which made the run at what was considered terrific speed in those days—possibly ten miles per hour—was one full of thrills. Today the trip that once required an entire day is an easy run of three hours. The Cannonball Express carried the mail. The contract specified the time allowed to make delivery to Yosemite Valley. On one occasion, the Cannonball stage ran into a forest fire on a narrow road



high in the mountains, at a point where it was impossible to turn around. With the flames sweeping down upon the coach, the situation was one of great danger. Calling to his passengers to cover their faces, the driver whipped his horses and dashed at full speed into the fire and through it. Not one of his frightened passengers was injured, though the horses were badly singed and the canvas cover to the luggage at the back of the coach was blazing when the rolling vehicle came to a stop a mile or so beyond the forest fire.

Hold-ups were frequent in those early days. Daring robbers frequently felled a tree across the road to trap a stagecoach where it could not be turned around to escape. Occasionally the bandits made off with good hauls. Some were captured, more were not. One particularly daring

hold-up that has become notorious in story was staged about halfway between Old Faithful Inn and the Lake, in Yellowstone. The bandit took a position behind a rock projecting into the road at a very sharp curve, a point from which he could control the road for several hundred yards in either direction. He spread out a blanket near the road, and as the coaches came around the great rock he commanded the drivers to stop. He directed the passengers to step out and empty their valuables from their pockets to the blanket. The Dudes were huddled on a hillside which the bandit easily controlled from his vantage point. As the next stage appeared, he repeated the operation, carrying on a running conversation all the while with his victims, joking about their plight, bantering them, and generally keeping them in good humor. This fellow single-handed actually held up the passengers of twenty-eight stages in a row and made his get-away into the mountains with the blanket containing about four thousand dollars. This bandit escaped from the park, his identity unsuspected, and he would never have been caught had it not been for a quarrel with his wife, who in revenge revealed his secret. He was then captured, tried, and sentenced to a term in Leavenworth. Finishing his sentence, he went to California, where he died eventually eating an ice-cream cone!

Bandit stories and other yarns of adventure in the parks in the early days, as told by the Old-Timers, are still a source of delight to the Dudes as they gather for the evening lectures at the hotels and lodges. Some of the tales have grown with the years until they have become known as "whoppers." The whoppers started in the Yellowstone country shortly after the first explorers returned to civilization. The stories they told of boiling water spouts eighty

feet high, of boiling mud puddles and hot-water pools and streams, were just too preposterous to be believed by the wise folks at home, who knew such things simply could not exist.

Most noted of all these early purveyors of whoppers was Jim Bridger, the pioneer trapper and pathfinder and one of the first white men to penetrate the fastnesses of Yellowstone. When Jim



Bridger found that the truth was doubted anyway, he concluded that he might as well make his lies colossal ones. He enlarged and developed upon them until he arrived at a state of perfection, the like of which has never been equaled since his time. One of his best stories was an account of how he caught fish in a cold stream, flopped them into a pool of boiling water alongside the stream, and cooked them there. This was not necessarily fiction, for there are at least a dozen places in Yellowstone where one could do exactly that. To vindicate Jim Bridger's veracity in that one story the Sierra Club, the California mountaineering society, on the occasion of an outing in the Yellowstone did cook trout and make coffee in a boiling pool. So the distance between the truth and the whopper is not so great after all.

A few years ago, in the course of a summer spent in the Yellowstone, Harry W. Frantz, the well-known Washington correspondent and writer, became interested in these whoppers from the old days and gathered from some of the Old-Timers their most whopping whoppers. He would come to the evening gatherings at the hotels dressed

in old buckskin clothes, a Buffalo Bill hat and long, black whiskers. Interrupting the ranger's nature talk, this picturesque character, who apparently had just straggled from the jumping off place would demand:

"Ranger, where does the West begin?"

The ranger never seemed to know the answer to that one.

"Well, I'll tell you," the old man would say. "It's half-way between St. Paul and Minneapolis. I know, because I was out here in the 'sixties when the West began. There wuz nothin' but sagebrush an' Injuns as far as the eye could see, Buddy, I helped to start the West. Say, would you like to hear about some of the Injun fights we had?"

The ranger invariably appeared annoyed at this interruption, but the Dudes always clamored for more.

"Well, it wuz in the fall o' sixty-nine an' the Injuns out here wuz thicker'n fleas on a yaller dog. I ran into thousands of 'em, right here on this spot where we're talkin' now, an' when they saw me they started to chase me. Their war whoops wuz blood-curdlin', an' they waved their



tommyhawks an' came right after me. I ran up yon' canyon, hopin' to get away from 'em. But they kep' on comin' an' gainin' on me. I ran faster an' faster, but they kep' a-gainin' an' a-gainin' an' pretty soon they caught up with me. I saw somethin' had to be done, an' I looked up. To the left o' me wuz a cliff

a mile high and to the right o' me another one half a mile high, so I kept on runnin' straight ahead. All of a sudden I

came 'round a bend an' right in front o' me wuz a cliff two miles high. I wuz trapped. That's all they wuz to it—trapped, where the devils couldn't help but get me."

Dead silence, as the old fellow finished his story.

Some Dude always broke it with:

"Well, what did they do to you?"

Trembling with emotion, the old man said: "By God, they killed me!"

Another whopper that always made a hit was the story originally told by "Buffalo" Jones who claimed he once saved the bison from extinction. He galloped into the Yellowstone one time, he said, to find the last of the bison being killed by the wolves and the coyotes. In fact, the bison were all dead but a few calves, which the wolves were just preparing to kill.

"I roped eight calves and saved them," he asserted, "though the wolves and the coyotes were surrounding us by the hundreds. As soon as I got one calf, I tied my hat to it, knowing the wolves would never touch anything tainted with the fresh scent of man. To the next calf I tied my coat, to the next my vest, and so on, until I didn't have anything on but my socks. When I had saved the eighth, I picked it up in my arms and galloped back for the seventh, which was surrounded by wolves. I then hurried back to the sixth and grabbed that calf just in the nick of time. I tied the lasso around these calves and fastened the end to the horse's neck and raced to the other calves and saved them again just in time. The strain of saving them all was so great that I fainted, but just then my boys came up and drove off the wolves and gave me some whisky and saved the calves so that the bison was never entirely wiped out."

It is a happy custom which has grown up in all of the national parks for the Dudes and Sagebrushers to gather after dinner about the fire, either in hotels, lodges, or in the private camps, for informal entertainment, starting usually with singing and other musical entertainment, and then resolving into the evening discussions with the rangers. The rangers talk of the natural wonders, or of the wild life, or sometimes tell tales on the Dudes and Sagebrushers themselves, to their evident enjoyment. The evening fire-side gathering has become so popular in some of the parks that the rangers have built open-air assemblies with logs for seats and bonfires for the stage lights. While not as comfortable as the lobbies of the hotels, the campfires lend more enchantment and atmosphere to the gatherings. Many times the campfire under the stars lures the guests away from the hotel for the evening. The firelight flickering on the trees, the odor of burning pine, the witchery of the starry sky overhead, the comradeship of the camp, combine to cast the spell of the wilderness over the visitor.

From every corner of the land they gather, swapping ideas, talking over road conditions, telling their adventures and listening to those of their new-found neighbors, or enjoying the impromptu entertainment of a band of informal musicians. There is always somebody who can do something around a campfire.

"I have met people here from every state in the union," exclaimed President Harding after he had visited a number of these camps. "This is a cross section of America. There are no finer playgrounds in the world." Like many another observer, he was enraptured by the spirit, the fraternity, of the campfire "town meetings."

The Sagebrusher has the advantage over the Dude in

one respect, at least. Having his own outfit, he can make camp wherever he chooses, and linger as long as he chooses. He can take time to enjoy the mountains—this life about the campfires, so colorful, so rich in song and tradition, the chance to shake off the years and be young once more for a few days or a few weeks. Most of the Sagebrushers do travel leisurely, but now and then one comes “Highballing” it through the Parks, as did the motorist who drove up to the entrance to Rocky Mountain Park and demanded of the ranger, without getting out of his car:

“How long does it take to see this park?”

“You could do a good part of it in two days,” said the ranger.

“Too long. Gimme a sticker, will you, so I can prove I’ve been here.”

This happens occasionally at all of the parks. Why such visitors come, no one knows. Where they are going, no one knows—least of all they themselves. But these are the exceptions to the rule among the Sagebrushers, who, having no schedules to keep, make the side trips, explore for fishing streams and lakes, stop over longer, as a rule, than visitors who travel more formally. The Sagebrushers have always been the nomads of the parks.

Sagebrushers derive their nickname from the early days when their forerunners arrived at Yellowstone, Yosemite, and other older national parks in covered wagons. Days on end they drove their horses or mules across the plains, en route to the parks, camping each night in the sagebrush. Roads were bad, stores were few, and the early camper was obliged to bring with him such comforts of home as he expected to enjoy in the park. The trip was sufficiently strenuous and hazardous that he stayed some time in the

park, often a month or more. It took the old-time Sagebrusher eight days to make the loop in Yellowstone, which any motorist can do in a day nowadays.

The first Sagebrushers to forsake their covered wagons for the noisy early automobiles were not very hospitably received at the gates of the national parks. They were told to park their cars outside the boundary lines, until in 1913 the first autos were permitted to enter Yosemite Valley as an experiment. Even then the authorities there were suspicious of the little juggernauts. Motorists were instructed to drive their cars to the parking area in the center of the Valley, where the gas buggies were chained to great logs. By heck, they were not going to have any of those new-fangled vehicles starting up and running away!

These stern restrictions quite naturally met with much protest on the part of motorists, particularly in California where the automobile clubs were growing rapidly. The concern of the park authorities was mainly for the safety of Dudes riding in stages whose horses might become frightened at the noisy automobiles. For a time, it was thought that special roads must be built for automobiles. This plan was abandoned because of the expense, but in most of the parks certain hours were set aside when automobiles could use the roads. During these hours, the horse-drawn vehicles were ordered off the roads. Many people who opposed the admission of autos insisted that the use of a machine in the mountains was but a fad which would pass. Now the national park Service is wondering what to do about the airplane!

The increase in travel to the national parks since the automobile came into general use has been phenomenal. Thirty years ago a good season meant three hundred thou-

sand visitors to the parks. Most of them came by rail. Today the figure is over six million visitors per season, nine out of ten of whom come in private automobiles. The safety record of the parks is truly remarkable. In the past fifteen years, over two million cars have been driven to Yosemite Valley with but one or two fatal accidents within the park. Where is there a city that can equal such a traffic record? In other parks, accidents have been equally negligible.

The average motorist is more careful in his driving when he reaches the narrow mountain roads. He knows the traffic regulations are enforced by the rangers and he observes them. These regulations are quite simple and are easily understood, even by motorists unfamiliar with the trick of mountaineering in an automobile. The experienced mountain driver knows how to "play safe" on mountain roads. He makes sure that his car is in good condition before starting for the parks. Driving over mountain roads, on which there may be occasional rough stretches, is a sure test for any car. At high elevations where the atmosphere is thin the motor is under additional strain. It should be in good tune for this extra work. High altitude driving requires more gas per mile, incidentally.

The veteran Sagebrusher is not ashamed to use low gear in the mountains. He uses it not only to go up hill, but to go down hill and to hold the car back on the short level stretches where curves make it unsafe to go faster than fifteen miles an hour. He knows that use of compression to hold back the car on downhill stretches not only saves his brakes but gives him an additional factor of safety in case of emergency. Yet it is surprising how many inexperienced mountain drivers think that low gear is used

only to start the car. There are still some narrow, unpaved roads in the high country of the great parks of the West. There always will be some. On such roads the old-timer in the mountains will consider fifteen miles per hour a good speed on curves and twenty to twenty-five fast enough on level stretches, especially if he wants to see anything. He never ventures into the mountains anywhere without a good set of tire chains. Occasional rains will surely make slippery places in the hills, so heed the rangers' advice—always carry chains and avoid embarrassment to yourself and to everyone else.

From these remarks, the impression might be created that the roads of the national parks are hazardous. The contrary is true, as the parks' safety record proves. But in the mountains, when showers or a brief snowfall may take place any time, roads sometimes become slippery temporarily. The motorist with chains seldom has trouble. The government has spent hundreds of thousands of dollars improving the roads of the parks and has embarked upon a fifty-million-dollar road-building schedule, but even paved roads, such as are now found in nearly all the national parks will not eliminate the occasional need for chains.

It goes without saying that sight-seeing and driving never go well together. The experienced mountain driver parks his car at the side of the road so that others may pass easily, and then enjoys the scenery. It would seem that this suggestion is unnecessary, but the beauties of the park are distracting and the driver sometimes forgets to keep his eye on the road. The driver who parks his car and leaves it should make doubly sure that his brakes are set and his car in low gear. Otherwise he may find himself in the position of a Sagebrusher who once visited Crater Lake.

This Sagebrusher left his car, a new limousine of expensive make, on the rim of the lake along with a dozen other cars, while he walked down the trail to the lake shore, a thousand feet below. While returning he heard a crash, and looked up to catch but a fleeting glimpse of an automobile catapulting past him and crashing through the trees. It came to rest, a total wreck, far below him. Returning to the rim, the Sagebrusher met a party of Dudes to whom he narrated excitedly the fearful and wonderful story of the car that just missed him and had crashed on the rocks below. Glancing about as he neared the end of his story, he said: "It smashed into a big tree and—and—and, my Lord, it was mine!"

The experienced Sagebrusher never loads a half-ton car like a ten-ton truck. The beginner often reaches the steep grades of the mountains with luggage tied on both sides of the car, on the front, on the back, with a bed spring on the top and goodness knows what inside the old bus. Sometimes the women and children are literally buried in camping equipment, while the driver himself can barely see the road ahead. What any of them might see of the beauty spots along the roads is often hidden by the marvelous collections of windshield stickers that are the pride of so many amateur motorists. Some of these motorists, with their cars laden with stoves, beds, groceries, and what not, would never reach the parks were it not for the unfailing kindness of other motorists.



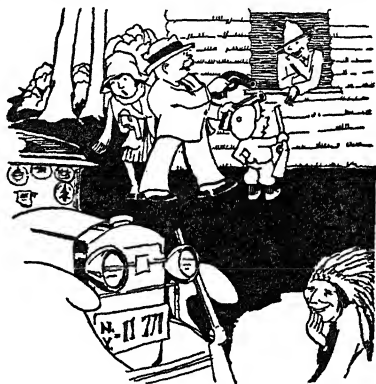
Long experience has taught the rangers that the all-wool blanket is the only kind to have in the mountains. In the summertime, when the nights are cool but not cold, the ranger uses a sleeping bag with but one double wool blanket in it. In the autumn, when he camps out at freezing temperature, he adds one more wool blanket around the sleeping bag but inside the oil-skin cover. Since showers are frequent up in the mountains among the clouds, the rangers advise every Sagebrusher to have his bedding in oiled silk or other waterproof cover. The warmest place to sleep is on the ground. It may take the tenderfoot some time to become accustomed to sleeping on the hard earth, but he will find that it requires much less bedding than the air mattresses, army cots, or other ingenious portable beds. Of course, these comforts are highly desirable, if they do not overburden the car.

A list of necessities for the Sagebrusher who proposes to camp out in the parks would include the following: one light-weight tent; one oiled-silk sleeping bag for each member of the party, or other good beds with all-wool double blankets; one gasoline camp cook stove, one frying pan, two pots, a coffee pot, and a compact set of plates and utensils; fishing tackle, an axe, a small shovel, a hot-water bottle, several yards of mosquito netting, a flashlight with extra batteries, an emergency medical kit with common remedies and bandages; a day's supply of food, to be replenished en route and increased in case of excursions into remote, unsettled areas; a complete set of car tools, two spare tires, a tow rope, and by all means a good set of tire chains.

That amount of equipment will see the average camper through in fine shape. Of course as he goes along the Sage-

brusher's inventive ability will assert itself and from time to time he will devise new wrinkles in camp equipment, until after a season or two the rangers will be listening to him explaining how he enjoys "all the comforts of home."

Arriving at a national park boundary, the Sagebrusher will be received, registered, and checked in by a ranger at a station. This is for the protection of the Sagebrusher, so that in an emergency the rangers may find him and so that undesirables may be kept out of the park. This registration is resented by some visitors, who feel that the rangers are making undue inquiries when they ask the address, the occupation, the name of the car, and other details. One question always asked is, "Have you any firearms?"



The rangers examine all guns, make sure they are not loaded, and then seal them, so that no shooting can be done in the park. The guns must be checked out, still sealed. Most of the heavy artillery carried into the parks is brought by visitors from the cities of the East. Starting the long trip for the wild and woolly West, they want to make sure that they can at least die fighting if death at the hands of the Indians or bandits or bears is to be their fate. Westerners as a rule do not carry firearms. Knowing the West, they feel quite safe among the Indians, the bad men, and the bears. The New Yorker's impression of the West undoubtedly is derived from hair-raising ad-

venture stories in the magazine thrillers and in the conventional wild-west movies. As a matter of fact, the easterner is much safer in Jackson Hole, Wyoming, or Hangtown, California, than he is on a street corner in Chicago or New York.

From the ranger who checks him in, the Sagebrusher will receive a free guidebook, map, or other literature prepared by the government for his benefit. The ranger is ready to answer questions and to help plan the trip through the park. Occasionally a Sagebrusher ignores this assistance, tosses his literature into the car and follows the next fellow, who as like as not is wandering aimlessly. The rules and regulations of the parks are extremely simple and are made solely for the purpose of protecting the park, the wild life, and the visitors. They can be read in ten or fifteen minutes, after which another five minutes spent in discussion with a ranger will enable the visitor to know where the main attractions lie, where he can camp, which are the one-way roads, and where food and other supplies are available, or where he can find meals and lodging and at what prices.

Ninety-nine out of every hundred visitors are quite in sympathy with the simple and reasonable rules of conduct in the parks. They are, in brief, as follows: Avoid speeding, never leave fires burning, clean up campgrounds before leaving, don't tease the animals, never carve names on trees or rock formations, leave the wild flowers for others to see and enjoy, and in general help the rangers protect the parks for the four millions who will be coming next year.

In the parks the motorist finds campsites cleared and prepared for him. They are equipped with running water,

rough tables, and sanitary facilities, including flush toilets. Wood is available nearby. Some of these campsites have fireplaces, for the first-comers at least, and nearby are stores where supplies can be purchased, and in the larger parks, cafeterias where meals are served at reasonable prices. Near many of these campsites are tents, already set up, to rent at low rates for housekeeping purposes. These tents



are equipped with beds, stoves, and tables, and all the Sagebrusher needs is his own bedding. Each year the park engineers develop new campsites or increase the capacity of the old ones. Each year the Sagebrushers demand still more campsites.

It is a thrilling sight to visit any of the camps in the national parks on a midsummer evening and see from five hundred to a thousand city folks busy around their little fires, the evening air filled with the odors from a hundred coffee pots and a hundred frying pans. Look into almost any camp and you will find fresh-caught trout sizzling in the pans. Visit any of the scores of campfires after supper and you will find half a dozen families swapping experiences of the road.

A generation ago, camping out was a means of getting away from the conveniences and conventionalities of home. It was the complete change from civilization to primitive life, from niceties to hoboeing. The rougher the camping, the better. The camper wanted hardships, sought them

out. Not any more. Camping, to the average Sagebrusher, is merely an economical means of traveling about the country, of seeing the sights that formerly were available only to the well-to-do, the Dudes. The modern Sagebrusher wants a camp that is almost as convenient as home. Many of them have such camps. It is an education in organization and in housekeeping to see how some of these camping layouts are planned and used. That is one of the joys of Sagebrushing, seeing how the other fellow lives, just a few yards away from you behind that clump of trees.

Nevertheless, and in spite of the fun there is in camp-fire cooking, the rangers say that the average family of Sagebrushers would enjoy themselves more if they took advantage of the luxury of the cafeterias in the national parks. That would relieve the women folks of the drudgery of cooking and dishwashing, something the male Sagebrusher usually avoids by declaring in all seriousness that he guesses he must go out and provide the family with a mess of fish. The rôle of the provider has its advantages.

Sagebrushers bound for the national parks or traveling in the parks will do well to refuse rides to tramps, whether they be men or women. This observation applies to motor-ing anywhere at any time. Unless he knows the person who begs for a ride, the motorist endangers himself and his car. The newspapers are full of reports of kind-hearted motorists being killed or injured by tramps whom they kindly picked up for a ride on their way; and there are many more stories of cars being stolen by these bums. It is no longer a rare occurrence for women to steal cars from people who have befriended them.

In the national parks the tramp is regarded with sus-

picion. If he appears at the gates afoot, he must produce a bedroll or a roll of greenbacks with which to rent a bed at the hotels or camps, or the rangers turn him back. The same thing applies to women afoot. However, most of the tramps who do get into the parks come in the cars of bona fide Sagebrushers, and the rangers' problems arise usually when the bums seek beds or meals for which they have no money to pay.

One night at Yellowstone two attractive girls appealed to the rangers for help. They claimed to be hikers but were broke and wanted to know if there was any place provided by the government where they could sleep. They said they were from Cleveland and had come thinking it would be lots of fun to hike through the park. Asked how long it had taken them to "hike" from Cleveland, they said eight days. Anybody could tell by looking at them that the sun had never shone upon them nor had their feet ever touched a dirt road. But here was a problem that had to be solved, so the rangers called up the laundry and fortunately found that a few girls were needed. The two were sent to the laundry to work until they could earn enough to travel.

This type of foot traveler must not be confused, of course, with the legitimate hiker, who comes to the national parks to spend his days afoot on trails, journeying from camp to camp and paying his own way, or camping overnight with his own equipment carried on a burro. There are in the parks thousands of miles of trails, over which tens of thousands of visitors, both Dudes and Sagebrushers, tramp each year, to their great enjoyment. In fact, the trails provide the only way that many of the more beautiful spots in such parks as Yosemite, Grand

Canyon, Glacier, Rocky Mountain, and Sequoia can be reached, and along the Pacific Coast hiking has become one of the most popular of sports as well as a most healthful one. This type of hiker is welcomed to the parks, for he is almost invariably a true lover of the mountains, appreciative of the opportunity to hike that the national parks offer.

Tramping over the park trails one is struck by the great number of women making the trail trips alone. Dressed in khaki outing suits, with strong boots, their knapsacks strapped to their backs, they trudge over the mountains from camp to camp, as safe as they would be in their homes. During the summer months, the school teachers and other feminine vacationists in the parks are so numerous that they far outnumber the men. In most of the parks, for the benefit of women who are traveling alone there are numerous walking parties under the charge of ranger naturalists making the trail trips from the different camps. In Yosemite, the concessioner company operates a chain of camps extending through the High Sierra at strategic points along the trails where the hiker or the trail rider may find food and lodging at a minimum of expense, thus relieving him of the burden of carrying a roll of blankets or a pack of supplies. Similar facilities are available in Rocky Mountain Park. In Glacier Park chalets located on the trails all through the

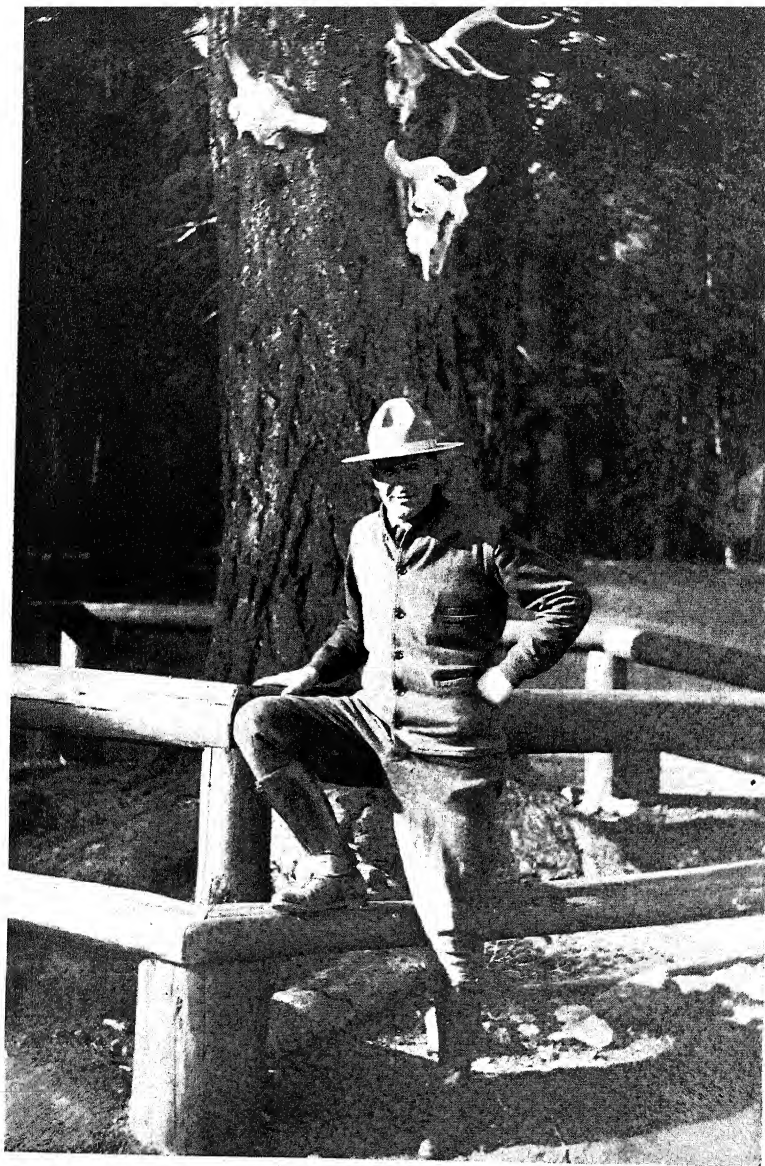




A NATIONAL PARK RANGER'S CABIN



A NATIONAL PARK RANGER RIDING PATROL



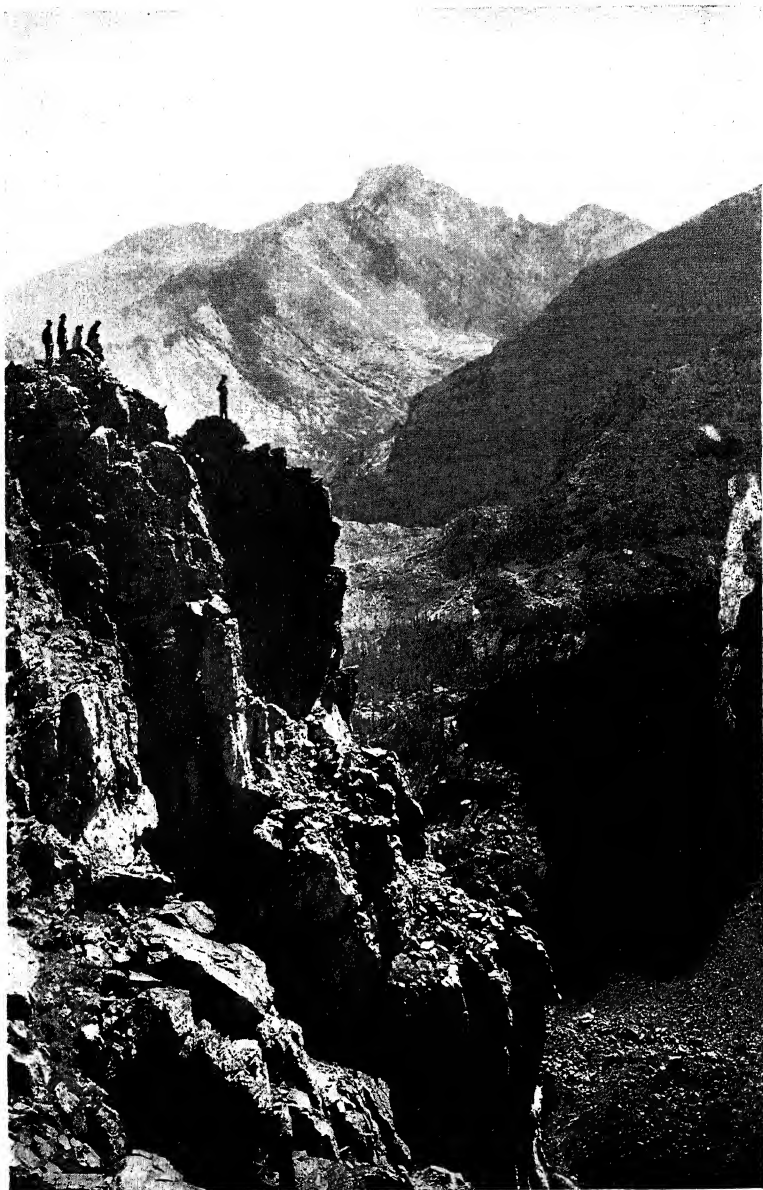
HORACE M. ALBRIGHT, SUPERINTENDENT OF YELLOWSTONE NATIONAL PARK
1919-1929; DIRECTOR OF THE NATIONAL PARK SERVICE 1929-1933



THE "CATHEDRAL" VIEW OF THE GRAND TETON, GRAND TETON NATIONAL PARK



SWIFTCURRENT LAKE, GLACIER NATIONAL PARK



LONG'S PEAK, ROCKY MOUNTAIN NATIONAL PARK



LOST?



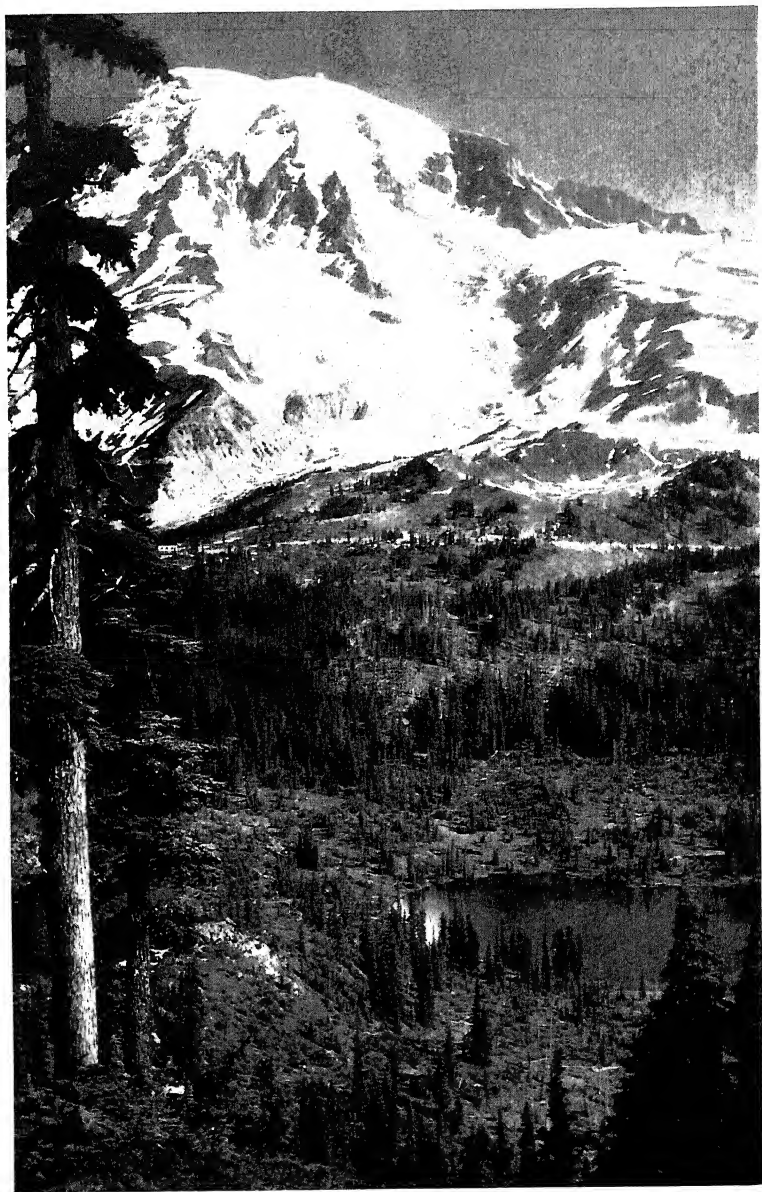
THE THREE LITTLE BEARS IN REAL LIFE, YOSEMITE NATIONAL PARK



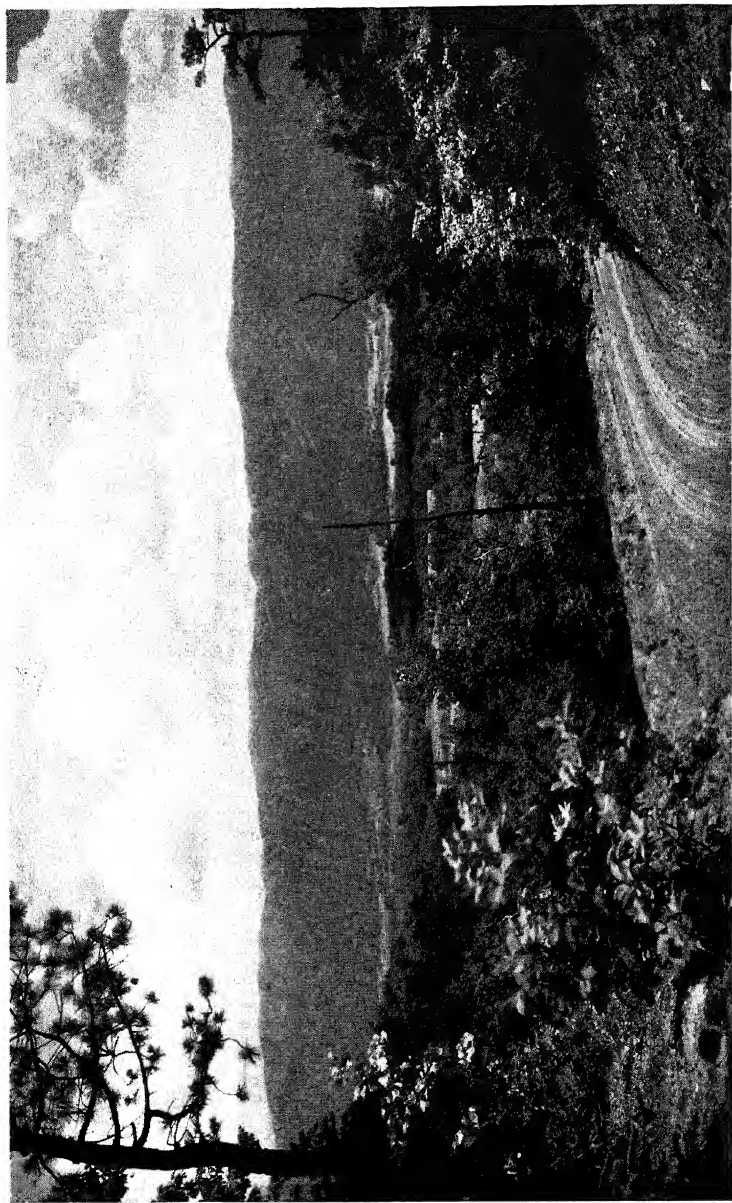
"THIS IS BED-TIME STORY HOUR, FRIENDS—ONCE THERE WAS A BEAR—"



SATURDAY NIGHT



MOUNT RAINIER, FROM TATOOSH RANGE, MOUNT RAINIER NATIONAL PARK



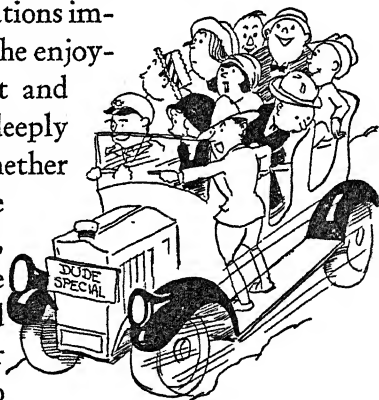
© Thompson

IN THE GREAT SMOKY MOUNTAINS NATIONAL PARK

mountains furnish the same type of service.

Trail riding is another recreation that adds to the fun of the Dude or the Sagebrusher. At strategic locations in all of the parks, pack animals and guides are available to take the visitor over the trails to the remote attractions not reached by automobile roads. The horses and mules used by the trail riders are trained for this type of work. Even the novice at riding can manage them by allowing the animal to use his own judgment in the matter of speed and in picking his way along a narrow trail.

Many and peculiar, at times, are the incidents in the life of the national parks. There is always something doing, for either the Dude, or the Sagebrusher. The main object of the parks, of course, is to preserve the wonders of the parks for the enjoyment of the people. They are the people's parks and the few regulations imposed by the rangers are for the enjoyment of the visitors, present and future. The rangers are deeply conscious of that fact and whether the tourist comes as a Dude or a Sagebrusher, the ranger, wherever met, is at the service of the visitor to help him find the hotel or lodge he seeks, or the campsite he wants, or to tell him where to fish or how to reach a certain mountain or view a waterfall or find the trail to the big trees. The Dudes and Sagebrushers number six million per year. The rangers number a mere four hundred. Each ranger, then, must serve fifteen thousand visitors a year. He





does his best, but at times he is a bit rushed. Those are the times when he needs the co-operation of the Dudes and Sagebrushers. Those are the times when he craves their patience and charity.

WHY BEARS BEHAVE LIKE HUMAN BEINGS

"OH, Ranger! Where can I see a bear?"

The bears are, without doubt, the greatest single attraction in the parks, at least from the visitor's point of view. Geysers, waterfalls, mountains, canyons, great trees centuries old, all fade into secondary importance in the Dude's interest when a bear ambles into sight. The rangers say that in Yosemite National Park a visitor will look at Yosemite Falls, half a mile high, one minute and then turn around and watch a bear at his antics for an hour or more.

This amazing interest of the public in bears goes back to childhood days. Americans have been brought up from childhood on Little Goldilocks and the Three Bears, and when they meet a bear in real life, later on, they simply revert to childhood. Bears are no longer wild animals. They have become personified. They are like people, and the visitors to the park want to treat them as such. That probably explains some of the foolish things people try to do with the national park bears.

"Fooling a bear" is something that just shouldn't be done. To illustrate, there was a bear in Yellowstone known as Mrs. Murphy. There had been several complaints about Mrs. Murphy, who was accused of nipping visitors' hands and feet, so a ranger was assigned to shadow her for a day and see what was happening. He reported as follows:

One Sagebrusher, for the sake of a picture, held some bacon in his mouth and coaxed the bear to remove said

bacon from his mouth. He got his picture and also escaped without injury. That Sagebrusher was lucky.



Another tried to make Mrs. Murphy jump for candy, like a dog. Now a full grown bear weighs about as much as a kitchen stove and is not built for jumping. So—Mrs. Murphy reached up, knocked the man's hand down so that she could reach the candy. That frightened the tourist considerably, but he escaped without injury. He, too, was lucky.

A Dude, with no candy or food, held out his hand as though there were candy in it. Mrs. Murphy became annoyed at being spoofed and she nipped the man on the toe. He retaliated by kicking Mrs. Murphy on the nose, which is a bear's most sensitive spot. She responded by whacking the Dude with her paw. He was bruised but not badly hurt. He was lucky.

Fully two score people fed Mrs. Murphy and her cub that day in the proper way, by throwing candy to her, and were entertained for hours by the bruins with no incidents nor accidents.

The only innocent visitor to suffer injury was a Dude who, disregarding a ranger's warning, insisted upon walking between Mrs. Murphy and her cub, to take a snapshot of the cub. Apparently believing her cub in danger, Mrs. Murphy rushed the Dude, tore out the seat of his pants, and, as she thought, saved her cub. The Dude rode the rest of the day in a blanket to hide a certain blushing and over-exposed portion of his anatomy.

After receiving this report, the superintendent decided that Mrs. Murphy was no more guilty than the Dudes and Sagebrushers who attempted to fool her with food that did not exist.

There are two kinds of bears in the national parks, grizzlies and black bears. The grizzlies can be seen only in Yellowstone National Park and occasionally in Glacier, Grand Teton and Mount McKinley National Parks, being recognized by the big broad head and by the hump over its shoulders, as well as by the silver tips of the fur. They are quite scarce, being much prized by successful hunters and trappers who shoot them outside park boundaries. The grizzly is a wonderful animal, perhaps the strongest and most ferocious beast of the American forest.

Indirectly Yosemite National Park was named after the grizzly. "Yo-semite" was the Indian word for "the Grizzly." It was chosen as the tribe name following a valiant fight by a brave, who, single-handed and unarmed, so the legend goes, slew a ferocious grizzly on a trail near Yosemite Valley. The Yosemite themselves were a warlike tribe, and they were well named after the grizzly. It is greatly to be regretted that the grizzly bear has entirely disappeared from Yosemite National Park, having been hunted down and exterminated before the territory became a protected area.

Grizzlies avoid human habitations, roads, camps, and are seldom seen in the daytime by the average visitor to the national parks. Before the war, at the canyon in Yellowstone, as many as from twenty-five to forty or fifty of them could be glimpsed at dusk, feeding at the so-called "bear pit." They were shy and usually took to the forest upon sight of humans, except at certain feeding places where

they had become accustomed to admiring visitors. This seems strange in view of the fact that the grizzly is master of the forest. The other bears fear him, and usually flee to tree tops when a grizzly approaches. A grizzly can't climb trees because after he is a year old his claws become blunted.

At the Canyon, two grizzlies, while but cubs, became separated from their mothers and fell in with the black bears. From the black bears they learned strange ways, including familiarity with humans. They frequented the camps of the Sagebrushers and learned to beg, something that a self-respecting grizzly will never do. These two grizzlies, as they matured, have given the rangers some worry because a grizzly when fooled or provoked is a dangerous animal. Fortunately, this pair heard the call of the wild and returned to their native haunts before anything happened.

The black bears are the bears that most people know. In spite of the popular belief to the contrary, there is no species known as the brown bear. Black bears may be either blonds or brunettes, just as are humans. The blonds of the bear family are brown, or cinnamon. There are various color phases ranging from light brown or tan to the deep black.

The black bears are the clowns of the forest. They are full of tricks and their antics never fail to give the Dudes and Sagebrushers a thrill. After all, a bear does seem terribly human, and when he sits on his haunches, his fore paws spread out before him, his head up like that of a human, he practically invites you to talk things over with him. As a matter of fact, most people do talk to the bears, just as though the animals could understand, and the things that are said by the Dudes and Sagebrushers are as funny

to us as the bears must be to them.

"Come on, Mr. Bear, get some candy. That's right. Come on, right over here, so we can take your picture. There it is. Here's another piece! Attaboy, bear! No, don't come so close. Stay over there, in the sun, where we can take your picture. No, go on away, that's all the candy I have. G'wan away. That's all."

The bears have heard that particular line of thought so frequently that they must know it by heart. The funny part of it is that no matter how much the Dude denies he has more candy, the bear knows for sure whether or not Mr. Dude is telling the truth. A bear has a marvelous nose. His nose knows, and no fooling. If the Dudes only realized this, they wouldn't try to lie to the bears about having no more candy.

It is this nose for candy, or nose for bacon—almost equally tempting to a bear—or the nose for ham, another great weakness with bruin, that leads the bears of the national parks to break into motor cars searching for food. They know when food is left in a car. The rangers warn all motorists to remove all food from their cars at night, but occasionally the warning is forgotten or ignored. Then the ranger hears that a fine car has been scratched up or the window smashed by a hungry bear.



Of course, Mr. Bear is likely to visit your camp if his nose knows there is bacon about. The best way to be sure of your bacon, when on a camping trip, is to hang it in

a tree so small that the bear cannot climb it. Large bears cannot climb small trees. They must choose large ones, so that they can hug the trunk while they fasten their claws into the bark.

Even this scheme is not always a sure way of protecting your meat from the bears. One Yosemite ranger tells of seeing a mother bear trying to get a ham from a small tree which she could not climb. After trying vainly to shake it down, she went into a huddle with her cubs. In a short time one of the cubs climbed the tree, chewed the ham loose and knocked it to the ground. The old bear seized it, and, with the cubs scampering after her, raced off through the woods. About the only sure way the rangers have found to keep a ham out of reach of bears is to suspend the meat on a rope halfway between two trees and high enough so that all a bear can do is sit on his haunches and survey the prospective meal wistfully. After a while he will amble off, growling to himself, "Sour ham!"

The easiest way to scare a bear is with noise. Beat a



tin pan or rattle some pans in a pail and the bear will lose no time in his retreat. But his get-away may be more disastrous than the robbery. One of the rangers, stationed at a lonely cabin, was pestered so much at night by bears whose noses knew of his bacon that he had a hard time getting his beauty sleep. Every night the bears awakened him with their clawing and scratching.

Tiptoeing to the door, he would heave a chunk of wood at them. Off they would scamper, apparently frightened for good. But in an hour, lured by the scent of bacon, their noses would lead them back. Finally, the ranger hung up a pail, filled with tin cans, pans, and other treasures, adjusting the pail with a trigger which the bears themselves would set off with their clawing. The device worked so well that when the pail, pans, and cans came clattering to the ground the bears took away the whole railing of the cabin porch. But they never came back.

It is never a good plan to go out and give the bothersome bear a kick on the tail. In the first place, a bear has no tail to speak of and in the second place he may resent the attention. A ranger in Rainier Park tells the story of a little bear that had been pestering him about the cabin, knocking over the garbage pail every night. Finally the ranger lost patience and planned to punish the little bruin. The next night, hearing the customary crash outside, he went out with vengeance in his eye. All he could see was the tail end of a bear protruding from a huge garbage can. Apparently, bruin was

stuck in the can. The ranger was about to take advantage of the exposed bear tail when the animal got loose from the garbage can and stood up. Instead of the little bear he had expected it was a big bruin six feet tall in his stocking feet. The ranger immediately abandoned the idea of spanking the bear!



Another ranger tells of tracking a mother bear and three

cute cubs through the woods for miles, trying to take a picture of them. They refused to leave the dark woods in which picture taking was an impossibility. The mother bear preceded her cubs, tearing bark from trees and overturning rotten logs, while the cubs hungrily hunted in the bark and decayed wood for grubs, ants, and other choice morsels of food. Finally, she tore the bark off a dead hemlock near the edge of the woods, then hustled her family out into the long grass of the meadow where she and the cubs rolled over and over in the grass. This was just the opportunity the ranger wanted for his picture. Hurrying to the edge of the woods, he took position and focused his camera. He didn't focus long. Out of the hemlock tree trunk, abandoned by the bears, there buzzed a swarm of angry hornets. The bears were rolling in the grass to shake off the attacks of the vindictive insects whose home they had wrecked.

As a rule, bears do not visit camps or cabins when the occupants are about. They have learned that Sagebrushers and racket are closely akin. The establishment of the bear pits in all of the national parks where bears are common helped to keep them away from the camps and cabins. A bear's apparent object in life during the summer is to eat enough to make up for the six months of winter when he is fasting, and Mr. Bear knows he can eat a lot more in an eight-hour day if he eats "combination salad" at the bear pits than he can if he nibbles at tidbits stolen from campers.

"Combination salad" à la bruin is the edible food from the kitchens of the hotels and camps, which was dumped in enormous piles at the pavilions of the bear pits. Around these pits were built fences to keep the visitors at a safe

distance, not so much to protect the people from the bears as to protect the bears from the people. That recalls the story of a ranger at Old Faithful, in response to the question asked by a Dude as to why the ranger carried a high-powered rifle.

"Is that to shoot the bears if they bother the people?" he asked.

"Naw, it's to shoot the people if they bother the bears," drawled the ranger. "Every now an' then I have to use the gun!"

But the rifle was there as a safety-first proposition. Sometimes as many as two dozen bears would gather at the "combination salad" plate at one time. The rule in Beardom is that the biggest bears can eat all they want first, then the next sized bears come along, and so on, until if there is anything left the little fellows can have some. Sometimes there is a difference of opinion among the big fellows as to who is biggest. If the bears get to fighting it may be dangerous to visitors to the park, particularly when several hundred of them are crowded around the inclosure. When a bear decides to make a get-away, he doesn't look to see if people are in the way. He goes on all four.

Ranger Arthur Chapman, Jr., son of the author of "Out Where the West Begins," tells an amusing adventure at the Old Faithful "salad bowl" one time when one of these little bears grew tired of waiting for the old ones to finish eating. He was hungry and the salad was disappearing at an alarming rate into the mouths of three huge bears wallowing improvidently in the middle of the bowl. The little bear, contrary to his usual policy of waiting patiently on the woods side of the pit, came over to a pile of cans and pans. He fanned his anger into a frenzy, slammed cans

noisily in every direction, growled loud enough to be mistaken for half a dozen bears, and charged across more cans at the "salad bowl."

The suddenness and the noise of his attack frightened



the big bears who ran off to the woods, perhaps fearing the arrival of a grizzly. For a time they left the "salad" to the victorious little bear, who ate greedily while the eating was good.

On the following evening, he attempted to duplicate his bluff. This time the big

bears were wise. Instead of running, they charged at the little bear. It was his turn to beat a fast retreat. He ran straight for the crowd of people watching the bears from the railing around the pit. It looked as if the time had come for the ranger to use the rifle, with those angry big bears tearing after the little fellow and all of them headed for a crowd of visitors. Fortunately, the big bears stopped their pursuit suddenly and returned to their feast. Only the little bear ran into the crowd, which, in less time than it takes to tell it, faded away leaving a lane for his escape.

In Yosemite National Park the bear pits were located some distance from the camps and lodges and the feeding of the bears is made a great event. In the evening just after dark, Dudes, Sagebrushers gather on the slopes, across the river from the pits. All is quiet and dark. Suddenly the lights are flashed on, revealing the "salad bowl," with anywhere from half a dozen to a score of bears growling and feeding as the bear man dumps numerous garbage cans of

supper for them. A tree stump in the middle of the platform is painted with syrup each evening and there is great rivalry among the bears to get at this. Bears are like little boys—they always want to eat the dessert first!

An odd impasse between the Yosemite bears and the Yosemite authorities came about some years ago when a new garbage incinerator was installed in the park. It was decided that henceforth the garbage would go to the incinerator, instead of the "salad bowl," and the bears became real cantankerous as a result. They raided camps, stole from the store and the market, and banged garbage cans around ferociously each night, raising havoc in general. The newspapers on the Pacific Coast took up the issue for the bears in their news and editorial columns, insisting that the Yosemite bears were on strike and that they were resorting to sabotage as a protest against the new incinerator. The papers published daily reports from headquarters of "The Amalgamated Brotherhood of Black, Brown, and Cinnamon Bears." Public interest in the matter was great, and the rangers received dozens of letters from newspaper readers protesting against the outrageous treatment of the bears. The Superintendent at Yellowstone finally wrote to the Superintendent of Yosemite, offering to give the Yosemite bears plenty of garbage and an eight-hour day if he would send them up to Yellowstone. After that, the Yosemite authorities relented and restored the "salad bowl," and the end of the strike was hailed generally as a great victory for the Bear Brotherhood.

Bears are always doing unexpected and perverse things. That is one of the reasons why they seem so human. There is always a surprise in a bear. He loves to fool somebody else, but he doesn't like to be fooled himself. He wants his

own way. He has his moods when he is sulky, when he is friendly, or when he is just plain ornery. The way to a bear's heart is through his stomach, the female of the species being just as susceptible in this as the male. Another human attribute, poets to the contrary! When a bear is hungry he is cross. When he is full of "salad" he is sleepy; when he is eating he doesn't want to be bothered. So there you are!

One of the funniest things in the world is a bear with a bottle of syrup. He will act for all the world like a drunken



sailor, in full sail, as he wobbles about trying to get the syrup out of the bottle and into his mouth. The rangers at Sequoia Park tell of a bear that stole a bottle of vanilla from a camp and actually found the flavoring so potent that it interfered with his faculties. Trying to find his

way home, this bear walked head on into a two-thousand-year-old sequoia tree. Unabashed, he tried to push the tree out of the way. The sequoia stood pat, and it required some assistance from the rangers to get the tight bruin back on the trail again.

Sagebrushers at Mammoth Auto Camp in Yellowstone awoke one morning to find a bear sitting on the limb of a tree with his head caught fast in a hole in the tree. He had attempted to steal the squirrels' winter supply of nuts and bread crumbs, and in working his head around in the hole probably caused his head to swell a little. Anyway he could not get it out, and there he was on the limb of the tree

with no chance of extrication except with human help. A ranger climbed the tree and got above the bear's head, and carefully chopped the hole larger, until bruin toppled from the limb with a resounding bump. With a "woof, woof," he was off through the timber.

Occasionally tame bears are given to the rangers by people who have tried to raise them from tiny cubs. They either grow too big for family pets or the people owning them wish to move and cannot take their bears with them. Some time ago a woman brought two bears over to Yellowstone. They were four years old and big fellows, one black, the other brown. She wanted them liberated in the park to live happily. We found, however, that she had been too successful in taming them. They had no urge to be wild bears again. They were just like dogs. We had to build a pen for them to keep them out of the lobby of the hotel, or from eating off the dining-room tables. When winter came, the chief ranger built a little log cabin in the pen for them to use for hibernation. It had one small door in the end. One day while he was inside the cabin, chinking it to keep out wind and snow, one of the bears walked in, thus blocking the door. It took the chief about half an hour to coax the bear to go out, so that he himself could turn around and escape. After that the chief closed the door when he entered the bear's house.

The life of a bear in his natural state is full of paradoxes. He is born while the mother is in hibernation, in a close, evil-smelling, almost air-tight cave. She is asleep, not as sleep is ordinarily known, but in a state of coma, almost lifeless, barely breathing. She has been asleep for three or four months, with all normal functions of her body suspended. New-born bears are tiny, hairless little things, no

larger than squirrels. They snuggle up in the warm hair of the sleeping mother bear's breast, and there they suckle and slumber, growing a little, acquiring a coat of fur. When she awakes in the spring, they are perhaps a month old. She is weak and mangy as she leaves the cave in search of food. She leaves the little ones in hiding in the cave for two weeks or a month longer.

All bears hibernate, of course, males as well as females. The latter seem to suffer no more from their long fast than do the males, in spite of the strain of bearing the young and feeding them a month on reserve strength from the last summer's food. One would think that the ravenous bear, fresh from hibernation, would eat everything in sight. But that is not the case. The bears spurn the food proffered by human friends for a month or more, rooting in the forest for certain herbs, roots, and natural food which their appetites crave. Then they are ready for the long-distance championship salad-eating contest.

The little bears seem to grow before your eyes, once they are brought from the cave by the mother bear. They are soft, fluffy, lively and cute.



No wonder they are so popular with the camera hunters. No wonder, now and then, a visiting Dude forgets the invariable rule of the mother bear that no one shall come between herself and her babes! No wonder the Dudes and Sagebrushers love to

watch those little fellows going through that first year of schooling under the coaxing, the guiding, and the spanking

of the mother bear.

About the first thing the little bears must learn to do is to climb trees and to climb them fast, for safety's sake. The black bear's main worry is the grizzly, and the only sure way to avoid a grizzly is to climb a tree. More than once the rangers have seen a grizzly approach a "salad bowl" and watched the black bears scamper to tree tops, where they patiently sit until the grizzly has eaten his fill. You would think to look at them that the black bears were up in the trees from choice, so utterly oblivious are they to the actions of the grizzly. However, as soon as Mr. Grizzly leaves the bowl the other bears come down from the tree tops in a hurry, to take his place at the feast.

A bear up a tree never fails to excite the curiosity of humans. The latter soon form a circle around the tree, with cameras pointed upward, and hundreds of films are exposed for a picture which, unfortunately, is seldom a success. The bear is generally too high for good pictures or he is shaded by the foliage of the tree, and the most the picture will show is a shapeless black spot which must be pointed out and explained.

"That's the bear I shot in Yellowstone," they'll tell you later, proudly displaying a picture. "See that black spot? Well, that's the bear."

The bear cubs are often elected to the task of climbing the trees to shake down nuts and fruit to the mother

bear. After she has eaten all summer, the old bear begins to fatten and she is careful about climbing trees for fear the



limbs will break. Then is when she makes the cubs do the work. In Yosemite especially have the mother bears worked this out to a fine science. Some of the early settlers in Yosemite planted apple trees about the valley, long before it became a national park. Every autumn the cubs are sent up these apple trees to knock fruit down to the mothers. Whenever a cub falls down on the job or returns to the ground to eat some apples himself, he is cuffed and sent crying back to the tree top. Not until the parent is fully satiated with apples can the cubs take their turn at eating.

Dudes are always asking about the private life of the father bears. Are they faithful husbands? Are they good providers? Do they do the spanking of the cubs, as in the case of humans? And so forth.

The rangers dislike to expose the weaknesses of the national park bears, but candor forces them to admit that as dutiful fathers, the male bears are a fine bunch of bums. As for bear family life, it just isn't. The males hibernate in separate apartments, or dens, all winter long. They are not present when the young are born. They don't even send good wishes. The little cubs probably never know who is their father, unless perchance the mother bear should meet him and introduce him to his offspring sometime during that first summer. The mother bear takes the cubs to her den during their first winter in hibernation. But once the winter is over she is tired of them, and she chases them away to forage for themselves as soon as spring comes. After that the cubs are not on speaking terms with either parent.

It is strange indeed that the bears should prosper and increase in numbers under these harsh conditions of youth. But they do. They are increasing so rapidly in Yellow-

stone, Mt. Rainier, Sequoia, and Yosemite National Parks that it is a problem to know how to handle them all. Bears are sluggish, easy-going creatures, but they are quick to learn. The hold-up bears are an example. A few years ago a bear we called Jesse James learned that by stopping automobiles on the road he could be fairly sure of a hand-out, some candy or cookies, or food of some kind. Other bears were quick to learn the same trick, and now there are a score of hold-up bears in the park.



One of the hold-up bears gave birth not long ago to two cubs which were named Tom and Jerry, after due consideration by the rangers. These cubs had the making of two of the liveliest rascals in the park. They were full of fun, their antics always attracting the Dudes and the Sagebrushers. The cubs learned the hold-up business when quite young, and their business was so profitable that the mother bear stayed with them the second summer, contrary to the usual custom. Apparently she hesitated to part from her prosperous and successful offspring. We wondered how long she would stay with them and whether Tom and Jerry would stand by their mother, as all good young bears do in the story-books but don't in the national parks. We were not long waiting for an answer, for the next summer cub Jerry showed up with her own cubs, whereupon the rangers hastily changed the name to Geraldine.

In the spring, the park superintendents come in for con-

siderable criticism because of the unkempt appearance of the bears. Early one season a woman visitor asked to be taken to see a bear. A ranger helped her find one. The bear they located was as thin as a rail. His skin seemed to hang like a big loose sack on him. One side was entirely without fur. One eye was closed. He was cross and mean. He certainly looked like the morning after a terrible night out. The visitor was quite disgusted.

"Well, when I want to see a bear next time, I shall go to the Bronx Zoo," she said. "We have bears that look like bears. This one looks like he had three feet in the grave!"

If she could have seen that same bear three months later, she would never have recognized him. His fur was thick and soft, he was sleek and fat, his disposition was grand. He was a changed animal. That literally is what happens to the bears of the mountains in the summer. They eat enough to replace the exhausted tissues, they grow new fur, they are almost new bears by the time summer ends.

The greatest collection of bears in any national park is in Yellowstone, where there are both grizzlies and the black bears. In Mt. McKinley Glacier and Grand Teton National Parks there are grizzlies and blacks, but the grizzlies are not so easily seen. Yosemite National Park has a great many black bears, and they are very tame and easily seen and photographed. Sequoia National Park has some fine black bears and until recently it was believed that a California Grizzly roamed its fastnesses. It is now agreed by all authorities on bears that the great California Grizzly is extinct. Mt. Rainier National Park has black bears, as have Crater Lake, Great Smoky Mountains, Lassen, Kings Canyon, Grand Teton and Rocky Mountain National Parks. There are no bears at Grand Canyon, Bryce, or Zion Parks.

One of the early bear yarns that always delights Dudes is the story of "Buffalo" Jones and the bad grizzly. Buffalo Jones was an early scout, a genuine man of the mountains, later appointed chief gamekeeper of Yellowstone. A certain big grizzly persisted in robbing camps and "Buffalo" Jones was authorized to discipline the grizzly, but was admonished not to injure the animal. It puzzled the old scout considerably. He scratched his head and tried to think how he could punish the bear and still not hurt him.



Finally, he rigged up a noose, caught the grizzly on one of his prowling expeditions, drew the rope tight under the bear's fore paws and around his shoulders, and pulled the rope over the limb of a tree. With the grizzly suspended a few inches off the ground, in a helpless position, "Buffalo" Jones proceeded to spank the bear as one would spank a bad boy. The grizzly yelped and whined until he was let down to the ground. Then he made a bee-line for the woods and was never seen around camp again.

We have often thought of offering complaining Dudes the opportunity to spank the bears that they wanted shot, on condition that they capture the bears as did Buffalo Jones. Not long ago, when the man who dumped the "salad" at the Canyon complained that a bear had bitten him and insisted that the animal be punished, the rangers said, "Point out the guilty bear and we'll punish him."

Just then a bear came out of the woods.

"There he is," said the man. "That's the one that

chewed me."

"No, it's this fellow over here," insisted his companion, as another bear approached on the opposite side.

They fell into a heated argument as to which was the bad bear.

"Well, we can't shoot all the bears," the rangers told them. "First you'll have to get the evidence to convict the bear."

A bear is presumed to be innocent until proved guilty. The rangers call the witnesses against the bear and question them about the alleged damage or injury, then seek to establish the identity of the bear. If the bear can positively be identified by the complaining witnesses, and there is general agreement on one bear, the bear is in a fair way to be convicted. But as almost always happens, if the witnesses cannot agree on the identity of the bear, the rangers refuse to do anything to the bear.

One time a big ranger of Scandinavian birth was sent to investigate a series of complaints against "a big brown bear" made by the boss of a road camp. It was alleged that the bear had stolen a ham; that he had torn open a case of maple syrup and had clawed holes in every can and drained them of their contents; that he had sneaked into the kitchen and eaten a large pan of applesauce which was to have been dessert at supper, and had also eaten up all the stewed dried peaches that had been cooked for breakfast; that he had taken one overshoe from each of three workmen while they were eating dinner, and had committed other felonies. There were ten other counts in the indictment.

The ranger called the crew together and told them that he had the instructions and power to run the bear out of

the country if he could be identified. Just then a big brown bear ambled across the open in front of the assembled group. One man excitedly pointed him out, "there he is now," but several said that was not the bear. A few moments later, two other bears were seen walking around a nearby building. One of them was declared to be the bear. But this bear was eliminated from consideration right away by other men who claimed positively that he was a good bear who had never harmed anybody or anything. While the investigation went on a half-dozen bears came around, but each had as many defenders as he had accusers. No more than two men could agree on any one big brown bear. It was certainly a "hung jury." Finally the ranger, a veteran woodsman of Scandinavian extraction, became disgusted and declared, "Ya can all come to blazes, ya don't know which bear ya mean and none of 'em will be touched!"

Illustrating the intelligence of bears, Ranger Chapman tells the story of Betsy, the big black bear that used to come to the back door of the mess house when the cook called. The cook used to give Betsy a pail full of scraps with the admonition to "bring the pail back." Half an hour later, Betsy would come back out of the woods, the handle of the empty pail in her jaws. "I won't claim that she washed and dried the pail after each meal, but she never failed to bring it back," says Chapman.



Lest the impression be created by these remarks about

our bears that they are the scavengers of the forests, let us consider the bear's diet. As a matter of fact, bears are omnivorous. They will eat almost anything. Garbage meets with their entire approval, once they have adjusted their stomachs to rough food by eating certain roots and herbs after coming from hibernation. But the bears lived in the national parks long before the advent of the hotels and camps and the "combination salad." They eat berries, green grass, bulbs, and certain wild flowers, such as dogtooth violets, snow lilies, and spring beauties. They are not too fastidious to eat wild onions. They like nuts. A mouse or a gopher or a trout is a relished tidbit, and ants and ant eggs make fine hors-d'œuvre.

To see a bear amble along, one would think he is too slow to catch these little animals. Yet a bear can show the most amazing bursts of speed, when occasion demands. Some of the Old-Timers claim that in the early days, before the "salad bowl" at the bear pits made life so easy, the Park bears actually were able to catch fish. Old-Timers tell of see-



ing Mr. Bear lying on the bank of a trout stream, one paw idling in the water, to all intents and purposes sound asleep. Suddenly like lightning came a flash of his paw, and a trout was flopping on the grassy bank. This yarn may be a whopper, though the Old-Timers claim it is not. Anyway, a bear is capable of acting that fast, if he wants to do so.

People who visited the national parks in the early days do not recall seeing many bears. Even in Yellowstone they were not numerous along the roads nor at the feeding grounds where selected left-overs from the tables of hotels and lodges were thrown out to them.

In some parks, the presence of dogs frightened bears and other animals from the roadsides. In others patrolling soldiers fired guns and pistols at bears. When the National Park Service was founded, dogs were excluded from the parks, and rangers took the place of soldiers and never fired at bears unless to prevent apparently certain injury to visitors. Thus the era of friendship between mankind and the bears began.

The rangers were criticized then, and are still, for that matter, for permitting the bears to roam at large through the parks. On the other hand, there would be a tremendous protest from the public if anything should be done to interfere with the opportunity to see the bears. The Dudes and Sagebrushers demand their bear, often the big thrill of the vacation.

Of course, during the war travel to the parks was greatly curtailed. Hotels were not open. Food for the feeding grounds or "salad bowls" was not available. There may be an effort made to avoid revival of these facilities for observing both grizzlies and black bears which were so popular in by-gone days. This new policy if enforced will be based on the theory that bears should live in the wilds without any aid from mankind. An argument can be made for such policies, but the Dudes and Sagebrushers—and the bears, too—will be hard to convince.

WILD ANIMALS YOU MAY KNOW

"As I watched the wild life of the park today, unconcerned and unmindful of the human beings about them, manifesting their confidence in the security of the situation, I thought how helpful it would be to humankind if we could have a like confidence in one another in all the relations of life."

President Harding, who was moved to make the foregoing observation following a visit to Yellowstone Park, is not the only visitor who has thrilled at this neighborliness of the animals of the national parks. Having no one to fear, other than their natural enemies of the forest, the other animals have followed the lead of the bears and made friends with mankind.

Though the bears have been the favorites of the Dudes and the Sagebrushers, they are by no means the most numerous of the wild animals of the parks. In all the parks together there are probably not more than twenty-five hundred bears, of which perhaps five hundred are grizzlies, the latter found only in Yellowstone, Grand Teton, Mount McKinley, and Glacier Parks. On the other hand, there are more than fifty thousand deer, scattered through the parks and monuments. In Yellowstone, Grand Canyon, and Wind Cave together there are over one thousand antelopes. In Yellowstone, Olympic, Glacier, and Rocky Mountain Parks there are over twenty thousand elk. In Glacier and Mt. Rainier there are about fifteen hundred mountain goats. In Glacier, Grand Teton, Mount McKinley, and Yellowstone Parks there are over sixteen hundred moose. In

Mount McKinley, Glacier, Yellowstone, Rocky Mountain, and Grand Canyon parks are perhaps two thousand mountain sheep. And so on. Of smaller animals and birds there are countless legions, well distributed through all the parks. The rangers are often asked how they know how many wild animals there are in the parks.

"We go out and count them," is the answer. Dudes usually take that to be a joke and laugh. The rangers do take a census of the animals each year, and the job is no joke. It is not as impossible as it sounds, for the reason that many of the wild animals congregate in the wintertime, when the snows are deep, in certain sheltered areas where the rangers provide them with food. True, the count is not entirely complete, but is sufficiently so to enable the rangers to estimate the number of animals each winter, so that they know whether or not the wild life is prospering and increasing. Caring for the wild life, providing it with food in the wintertime and protecting fur-bearing animals from poachers, is one of the major jobs of the rangers, authorized in the organic acts creating the national parks. Since civilization has driven the wild animals out of their natural winter feeding grounds at the lower levels outside the parks, the rangers must not only protect the animals but in many instances must provide them with food through the long winters.

Next to the bears, the wild animal of the greatest interest to visitors is the buffalo, found only in Yellowstone Park except for a small herd at Wind Cave Park and a few



individuals found in Platt Park in Oklahoma. Strange ideas prevail regarding the animals. Nearly everybody thinks the buffalo may become extinct. Every visitor to Yellowstone wants to see a buffalo before the last of the Thundering Herd has passed to the Great Beyond.

"How many are there left?" they inquire solicitously.

"Oh, there were about a thousand last season and there are a couple of hundred calves born each year," the rangers explain. "They're increasing so fast we have a hard time finding feed for them. We are trying to give away some of them. Can you use a nice buffalo?"

This strikes most people as astounding. The effective publicity of the wild life conservationists, which actually did save the buffalo from extinction a half century ago, has created a sympathy for the buffalo that is long enduring. The number of buffalo in existence today is pitifully small compared to the vast herds that blackened the plains in the days of the 'Forty-niners. But there are several fine herds and they are increasing all too rapidly for the peace of mind of their custodians. A buffalo is a huge animal, with a voracious appetite. He weighs a ton and it takes nearly a ton of hay some years to feed him through a bad winter. Finding forage for a thousand buffaloes is a serious problem in a national park where the grazing lands are limited in area. Rather than have the herds short of food, it has been the policy to give surplus young buffaloes to zoological gardens, city parks, or private owners who have the land on which to graze small herds; or kill the surplus and give the meat to needy Indians.

This keen public interest in the buffalo dates back to the early 'nineties when the American Bison Society undertook to save the buffalo from extinction, which at that

time seemed practically inevitable. The late Emerson Hough, representing *Forest and Stream*, and George Bird Grinnell, famous editor of that magazine, visited the Yellowstone in the dead of winter in 1894, just at the time that Scout Burgess caught Ed Howell, the notorious poacher, in the act of skinning some buffaloes he had killed in the park. Because of the inadequacy of the laws protecting the buffalo, the only punishment that the rangers inflicted was to eject Howell from the park, after which he returned to his poaching. This thoroughly aroused both Grinnell and Hough. In a series of articles and editorials, these two writers warned the nation of the passing of the buffalo. Congress was moved to legislate in 1894 for the punishment of poachers in Yellowstone. In 1901 a sum of \$15,000 was set aside to establish a new herd of buffaloes in that park.

By that time, the herd in Yellowstone had been reduced by avaricious poachers to twenty-two animals roaming wild in the park, four held in captivity at the lake by E. C. Waters, operator of a boat line, and four more at Henry's lake, captured and saved by R. W. Rock. The only other wild buffaloes were fifty animals at large in northern Colorado. These were subsequently wiped out by poachers. There were, however, two fair-sized herds in captivity outside the parks, one in Texas, known as the Goodnight Herd, and another in Montana, the Pablo-Allard Herd. The latter was subsequently sold to the Dominion of Canada and established in the Canadian national parks. There were a few small herds in city parks and some buffaloes running wild in Canada. The total number of buffaloes in the world was estimated at sixteen hundred.

The turning point for the Yellowstone buffalo was 1902, when Colonel C. J. ("Buffalo") Jones arrived in the

park to serve as game warden. He negotiated the purchase of eighteen buffalo cows from the Pablo-Allard Herd and they were delivered at Mammoth by Howard Eaton, the famous Wyoming guide. "Buffalo" Jones went to Texas and brought back three bulls from the Goodnight Herd. Two calves were captured from the wild herd on the Lamar River. This gave the park three strains of blood for the little herd at Mammoth that grew into the herd made famous by the filming of the famous motion picture, "The Thundering Herd."

By 1911 the so-called "tame" herd, which was not tame at all except that it was provided with hay in winter and was kept under control by the gamekeeper, had increased to 147 animals. In that year, hemorrhagic septicemia attacked some of the younger animals and fifteen per cent died. It was then that the rangers began vaccinating the buffaloes. Dudes and Sagebrushers think this is another whopper. Quite the contrary! Three times the disease has threatened the herd and each time it has been checked by vaccination. One of the really strenuous jobs for the ranger, when he has nothing to do until tomorrow, is rounding up the buffalo calves, herding them into a corral, and vaccinating them with a serum developed by the United States Bureau of Animal Industry.

The Yellowstone herds have thrived. The "new" herd long ago outgrew the quarters Buffalo Jones built at Mammoth and was relocated on the Lamar River. It grew to more than twelve hundred animals and long since would have been three to four thousand had not a considerable number been given away or killed.

A herd was established for the Crow Indians, northeast of the Park in Montana, and smaller herds have been re-established in the higher parts of Yellowstone, in the Lower

Geyser Basin, in Hayden Valley and other sections where there is ample grass and forest shelter in winter. Whether these herds will be driven back to the Lamar by exceptionally heavy storms remains to be seen. The total number of buffalo is now maintained at about 800 head which, considering the size of other herds in the United States and Canada, is probably reasonable.

A ranch is operated on the Lamar to feed the herds in severe winters. Otherwise the big animals would range out of the park when the snows are heavy. Once in a while a buffalo does that. One day the rangers received a frantic long distance phone call from one of the residents of Gardiner, Montana.

"Say, come down and get your buffaloes, will you?" he urged anxiously. "Two are loose in our main street and business is at a standstill. It's serious!"

The situation in Gardiner, as the rangers found it, was not only serious, but funny. Two big buffalo bulls were parading up and down the main street. Not another creature was stirring. Every door was closed, every store was empty, every window was full of faces peering apprehensively at the new bosses of the town. There was a sigh of relief when the rangers drove the buffaloes back to the park. Then Gardiner came to life again.

In 1923, Congress authorized the park service to give away surplus buffaloes to zoos, parks, and private individuals who had the proper facilities for handling them. When this announcement was made through the press, the rangers received a flood of inquiries from people interested in buffaloes. The letters indicated the hazy notions that people have about the size and habits of the buffalo.

One little girl wrote from New York asking for a "cute, gentle little buffalo to play with." Two boys wanted a calf



apiece as pets. One farmer from Nebraska wrote for some buffaloes to entertain his guests on Sundays. "It's kind of quiet around here," he said. "We're great hands to entertain and we'd like a couple of buffaloes." A man from Georgia sent a check for shipment of three buffaloes, then wired, just before they were caught, to withhold shipment. "My wife has convinced me that with four children and three buffaloes, our two-acre lot would be too small," he said. "She is afraid the buffaloes might hurt the children." Another family wanted a buffalo because their children had tired of playing with their cats, dogs, and rabbits, and perhaps a buffalo would interest them.

After the buffaloes had been shipped, some unique complaints came in from the new owners of the animals. Some said that the buffaloes were too large; they wanted small ones. The rangers ship only the young ones, as a matter of fact, because the crating and expressing of a full grown one-ton buffalo is some job in itself. The cost of catching and crating a buffalo is about seventy dollars. The animals are shipped by express so that they will arrive promptly and in good condition. Preference is given to game preserves, forest reserves, zoos, and parks, but many buffaloes have been sent to private estates and asylums. A herd of sixteen was shipped to the Famous Players-Lasky Company for use in the movies. Yellowstone buffalo have been shipped to practically every state in the union. Each autumn the rangers join the buffalo-keepers in a great

round up, at which time the animals are counted, the herd is inspected, and the animals for shipment are singled out. These round ups are about the last opportunities to see in this country the fearful and impressive buffalo stampedes.

In the fall of 1924, a buffalo cow was sent to Lincoln Park, Chicago. In May of the next year, there came to the park a card in a small envelope, a typical "stork" announcement, with a stork carrying a baby in its bill at the top of the card. Below was the following:

"Arrived May 8, 1925
Baby Buffalo
Weight 120 pounds
Mr. and Mrs. Buffalo"

One of the regrets of the rangers is that they cannot keep all the Yellowstone buffalo herds near a road where the Dudes and Sagebrushers can see hundreds of animals in action. Obviously the herds are too powerful and unwieldy to be kept close to tourist camps and hotels. However provision was made a few years ago for fencing a large area on the northern slopes of Mount Washburn and the Antelope Creek basin. Here, in summers before the war, a buffalo herd was brought from the Lamar country and released. Motorists coming or going over the Dunraven Pass-Tower Falls Road could always see the great, shaggy animals in the Antelope Creek region, but the fence was so carefully placed that it did not enter the picture. Of course everybody interested in these noble animals hopes funds will be available to continue this display amid such beautiful surroundings. By 1947 another buffalo herd can be easily seen in Jackson Hole National Monument south of Yellowstone.

The rangers hope to establish buffalo herds in some of the other parks, particularly Glacier National Park, where there is ample room and good conditions. However, the cost of establishing such a herd would be considerable. Perhaps the project may be carried out at some future time on the adjacent Blackfeet Indian Reservation. There is no doubt about the great public interest in the comeback of the American bison which used to roam the plains in millions, the wonderful animal which Theodore Roosevelt called "the most distinctive game animal on this continent and certainly the animal which played the greatest part in the lives of the Indians and most deeply impressed the imagination of the old hunters and the early settlers."

Next to the bear and the buffalo, it is the beavers that interest the visitors in the parks. These ingenious and resourceful little animals are like the bears in that they have many almost human attributes, though a very different set of them from the traits that are bruin's. The beavers are like humans in that they are always trying to improve

upon Nature. They are forever damming a stream or changing its course, or cutting down a tree, or building a new house. A beaver is never satisfied to let well enough alone. There are plenty of natural shelters in the woods, but these are not good enough for Mr. Beaver. Like his two-legged friend, Mr. Man, the



beaver must gather all his family about him, even the distant relatives, build a tenement house, and crowd into it. The

house is always overflowing, it always needs additions, new gables, or new roofs, or new rooms. Life in a beaver colony is just about as unsettled as it is in a great city. Perhaps that is why people are fascinated by beavers and their work.

Fortunately the beavers are prospering in many of the national parks. The beaver, like the buffalo, was threatened with extinction years ago, though his number never decreased in proportion to those of the buffalo. However, game laws protect the beavers now, even outside the parks. The most numerous beaver colonies in the national parks are in Rocky Mountain, Yellowstone, Glacier, Grand Canyon, and Rainier National Parks, where water is plentiful and where streams run all year long. No beaver can live happily without the daily opportunity to build or patch up the dam. The beavers live in a house built of logs and sticks surrounded by fairly still water, but they also burrow into stream banks in places, instead of constructing houses. If a lake doesn't exist, the beavers make one by damming a stream. The top of their house projects well above the water, but the entrance is always under water, and the beavers have to swim home and then go upstairs to dry quarters.

"Busy as a beaver." This figure of speech has amused many a Dude, after watching the ways of beavers in the parks. Beavers do their work at night. They sleep all day, which is unfortunate, for it makes it hard for visitors to get a good glimpse of them. The beaver does most of his work with his long, sharp teeth. With them he cuts down trees much as a woodsman would do with an axe. Aspens and other species of cottonwoods are the beaver's favorite trees. The bark, especially the inner layer of bark, is a favorite beaver food, while the logs go to make his house

bigger or his dam higher.

A colony of from thirty to fifty beavers can accomplish an amazing amount of work. In Beaver Lake Valley, near Obsidian Cliff in Yellowstone Park, they have erected a dam which is a third of a mile long. After they had cut all the trees in the lake they had formed, an operation which took several years, they cut the dam to let the water out, probably in order that the trees might grow again. Since the park service wanted to keep the lake for exhibition purposes, the engineers repaired the dam the beavers had cut. The beavers cut it again. The engineers repaired it again. The beavers cut it once more. The engineers finally gave up the contest. The beavers are the only form of life in the national parks that can defy the rangers and get away with it. Incidentally, outside interests are not allowed to build dams in the park for irrigation purposes, but the beavers do it right along and kill and cut thousands of trees. There is nothing to do about it. The beavers stay



right on the job and rebuild their dams as often as the rangers blow them out, or they cut a dam as often as the men repair it, if that happens to be their wish at the time.

Beaver colonies usually make their homes in the vicinity of aspen groves. They will cut down cottonwoods two feet in diameter, but prefer small trees. Once cut down, the trunks and branches of the smaller trees are cut in sections, from one to three feet long. These are carried over to the beaver house and are "salted down" under water for the

winter. When the beaver family wants breakfast in a hurry of a winter morning, one or more beavers select a log from the pile and take it into the house, and the whole family gathers around for a snack. The beaver holds the stick in his fore paws and gnaws fast and furiously.

Beavers use various types of construction. They make dams, lodges, burrows, and canals. The latter are often enterprises that call for considerable engineering skill. These canals are used to float logs to the house, thus solving the transportation problem for the beavers. The large flat tail of the beaver is popularly supposed to be useful for slapping mud on the house to plaster it, but this is not the case. The tail is the rudder by which Mr. Beaver steers his log and himself to his house, when swimming with a load. He uses it as a rudder and a propeller, too; he also slaps it on the water to warn other beavers of what he thinks is danger. The beaver is as skilful with his fore paws as is the squirrel. He uses them in much the same way to hold his food, to build his house, and to dig. His teeth seem to grow as he uses them, sometimes becoming so long that a beaver starves because he cannot close his mouth. They are constructed mainly for gnawing tree trunks, in felling them and in cutting the branches for food and construction purposes.

"How can I see a beaver?" This question is hard to answer. It takes much patience. The beaver dams are easy to locate in streams or lakes near aspen groves. The little animals are cautious about showing themselves during the daytime, particularly if strangers are about. The best way to see them is to take a location not too near a beaver headquarters and remain perfectly quiet until activities begin. Some beaver will be smitten with the urge to add a new

stick to the dam or to put a gable on the house. Or perhaps the engineer beaver will be out inspecting things, planning a night's work for the whole construction gang, which incidentally includes the women and children as well as the men of the colony. If you are patient and quiet in your movements, you may see the beavers in action.

The visitor who wants to see the wild life at close range must learn to stalk animals just as the Indians did. The majority of visitors cannot control themselves when they see a deer or a beaver or an elk or other wild life. They rush out in the middle of the colony or herd or flock, as the case may be, and begin snapshooting right and left. The result is that they scare the animals and birds away and not only spoil the scene for the next arrivals but actually lose out on their own snapshots. The only way to get good pictures of wild life is to remain perfectly still until the animal, unfrightened by sudden movement or by the noise of a machine, comes close enough for a good shot. It requires great patience and considerable skill to stalk game for pictures. It is one of the most fascinating sports in the world.

Some of the rangers have made remarkable pictures of wild life by following this patient course. Ranger Scotty Bauman, at Tower Falls in Yellowstone Park, established such friendly relations with a colony of beavers that they would let him pet them, though at first they would growl and blow at him in hostile manner. Wild animals live by avoiding enemies. Their safety depends upon their ability to flee. Intuitively they have learned to take no chances. If they are not sure whether or not a newcomer is dangerous, they assume that he is an enemy and take to the woods. The person who wishes to establish himself on good terms with any of the wild animals or birds of the

national parks must first let them get well acquainted with him. Mr. Beaver is just like all the rest of his neighbors. He wants to watch the newcomer, and decide about him personally, before he effects any entente. It takes patience, oodles and oodles of it.

Perhaps the greatest beaver city in any of the national parks is one discovered by Ranger Macy in Mount Rainier National Park along the Nisqually River, which is formed by the glacier of the same name. In the icy waters of this stream, the beavers have built a city covering twenty acres—houses, dams, ponds, canals, a maze of engineering. It must have taken several generations of beavers to have achieved that job. This is another instance in which the beavers resemble their human friends. One generation carries on where the other left off, one beaver engineer and his gang complete what a predecessor started. The whole colony stays with the work until the project is completed. One often wonders what unseen and unknown spirit or force guides these little animals, enabling them to stay with their complicated engineering feats without maps or plans or designs until twenty acres is covered with construction. There is no other animal like them, only humans excepted.

Next, in point of thrill they give the Dude, comes the moose. These big animals are really rare beasts even in the national parks where they are protected. The average visitor is excited by a moose track, let alone the moose himself. The moose is a lonely animal. He prefers life in the



solitude of the back country. He haunts the marshes at the base of high lakes, or those that play hide-and-seek with the rapids of the mountain streams. He takes his stand in the willows and brush, and when the visitor comes upon him unawares the moose takes one long, scrutinizing look, then turns and bounds into the woods. He who seeks to stalk a moose and take his picture must leave the beaten paths and explore the wilds of Yellowstone, Grand Teton, Glacier, or Mount McKinley National parks.

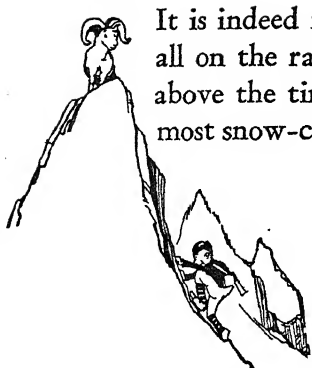
In Yellowstone in recent years the moose have spread over all parts of the park. Occasionally a mother moose and one or two calves will be seen in the willows along the roads. Bridger Lake, in a region which is proposed as an addition to Yellowstone Park, is a favorite feeding ground of the moose. The moose come to this shallow lake and wade out in the water to browse on lily pads and other aquatic vegetation. They hold their heads under water for unbelievably long periods, while nipping off the grasses at the bottom of the lake. It is estimated that there are eight hundred moose in Yellowstone and Grand Teton National Parks, and northern Jackson Hole, adjoining the parks, which is a national monument. At least four hundred more are in Glacier Park, mainly on the western side, and visitors can see them most easily near Lake McDonald. They are seen also in Mount McKinley and Isle Royale Parks.

Another elusive animal is the mountain sheep found in Glacier, Yellowstone, and Rocky Mountain parks, and in Mount McKinley where the beautiful Dall sheep lives. Mountain sheep have also been seen in Grand Canyon Park, and years ago they were native in Sequoia and Yosemite parks, from which areas they were unfortunately exterminated before the creation of the parks. In the Death Valley

National Monument, we have the interesting mountain sheep given the name of Nelson in honor of Dr. E. W. Nelson, the famous naturalist. Mountain sheep stay at or above the timberline in the summer time, but are seen in the lower valleys during the winter. In Glacier National Park trail parties see these wary animals almost daily on the trips to Iceberg Lake, Swift-current Pass, Going-to-the-Sun chalets, and other high places. During the wintertime, the rangers feed the sheep around Many Glaciers Hotel to keep them from migrating to the lower levels where they would be killed by the Indians.

In Rocky Mountain Park these wary animals are found near the summit of the Rockies along Specimen and Flat-top trails. Occasionally they are seen along the Fall River Road, where it crosses the mountains at an elevation of more than eleven thousand feet. In the winter the sheep come down into the Big Thompson and Fall River Valleys. In Yellowstone the sheep are hard to see during the summer time, except near the summit of Mount Washburn. Unfortunately, unthinking Sagebrushers, seeing these animals early in the morning, chase after them trying to take close-up snapshots, and so drive them out of the region. This is regrettable for it denies the rest of the visitors to Mount Washburn during that day the opportunity to see the bighorn mountain sheep, really a rare sight.

An animal similar in habits to the bighorn sheep is the Rocky Mountain goat. He is seen only by those who climb the high peaks, for the mountain goat loves to perch on crags far above the rest of the animals, with the world spread out at his feet. They are seen most frequently on the high peaks of Glacier Park and on the slopes of Mount Rainier. Being easily frightened, they lead precarious lives.



It is indeed remarkable that they can exist at all on the rare grasses and flowers found well above the timberline and just below the top-most snow-capped mountain peaks.

The most familiar animal in the national parks is the deer. Protection from hunters has not only increased their numbers but has made them quite tame and friendly. These gentle, graceful creatures are found in all of the parks, to the great delight of visitors. They are so tame that they have learned to eat raisins, bread, or other delicacies from the hands of visitors. The rangers estimate that there are more than thirty thousand deer in the parks, and many more in areas surrounding the parks. The park deer are of three varieties: the mule deer, so named because of his long, alert ears, the most prevalent species; the white-tailed deer, found mainly in Glacier Park; and the black-tailed deer, seen on the western slopes of Mount Rainier. Eastern species are present in Acadia, Great Smoky Mountains and other national parks and monuments on the Atlantic Seaboard.

Deer are the pets of many rangers and employes in the parks. They come to beg food and in some of the parks have learned to answer the call of rangers to "come and get it," the "it" being oats from the stables. In fact, the deer have become so much at home among humans that they wear out their welcome. In Yosemite Valley they have eaten the flowers and plants about the houses of the employes and rangers and have virtually wiped out the evening primrose, a delicacy which delights the deer's palate. This has raised an interesting problem for the rangers. Con-

servationists of flowers claim the deer should be ousted to preserve the wild flora. On the other hand, conservationists of animals claim that the flowers were there to feed the wild fauna. So there is the issue. Flora or fauna?

The deer do about as they please, regardless of the rangers. One of the hardest things in the world is to make a deer do something he doesn't want to do. The rangers would much rather capture a bear and get him ready for shipment than box a deer for a trip to a city zoo. The deer does not bite, but he is much quicker and is nervous and strong, and often strikes viciously with his feet when afraid he is going to be hurt or captured. In some parks deer are now so numerous that they can well be spared. There have been cases in and near national forests adjoining parks where the deer have become so numerous that they have overbrowsed the range, stripping leaves, branches and even bark from shrubs and trees in their quest for food. This was the situation in the Kaibab National Forest which borders the Grand Canyon National Park's north rim section. The deer population had to be drastically reduced, and this was accomplished by hunting, for the most part, licenses being issued by the State of Arizona. Since no hunting is permitted in any national park, surplus animals are removed by rangers.

In 1924 a cattleman of Arizona proposed a relief for the Kaibab situation by offering to gather together a band of cowboys and drive eight thousand deer from the Kaibab region down into the Grand Canyon, across canyons, streams, and the Colorado River, and up the steep slopes to the South Rim. At one point it was necessary to drive the deer in single file along a narrow ledge trail for eight miles. It is hard to imagine anything more difficult than the job these cowboys attempted. They were to receive

two dollars and fifty cents a head for all deer delivered to the south rim. The rangers advised them that the drive could not succeed, but assisted in every way possible. The cowboys assembled, likewise motion-picture men and newspaper correspondents, and the drive was on. For several days the deer round-up was carried on strenuously but not one deer ever reached the south rim. They simply refused to be driven anywhere.

The rangers later took a more simple, albeit slower, plan



of populating the south-rim area with deer. Several small fawns were brought on pack horses and by airplane to the South Rim and were raised on bottles. They did well and now visitors to the South Rim see plenty of deer. For a long time, visitors were treated to an unusual sight of a beautiful doe and

a rabbit which formed a strong attachment for each other and were always seen together whether walking, eating or sleeping.

The rangers are fond of these friendly, inquisitive animals and find it hard to understand the enthusiasm of hunters for killing deer. The rangers of Yosemite claim that the deer know exactly where the park boundary line runs. Along the Wawona Road, which parallels the boundary for several miles, the rangers point out plenty of deer on the protected park side of the road and call attention to the fact that there are none on the unprotected side, a few rods away, where the deer can be killed in hunting season. The rangers claim also that the deer, when grazing outside

the park, on hearing the report of a rifle will invariably run for safety behind the park line where hunters cannot follow!

A fine animal that was saved from extinction by the scouts, soldiers, and rangers of Yellowstone Park is the Rocky Mountain elk. The elk has long been a favorite victim of hunters because of his great antlers. Outside the parks and mountain country adjoining Yellowstone the elk were virtually wiped out a few years ago. The Yellowstone herds, enjoying protection since the creation of the park in 1872, have increased until it is estimated that there are forty thousand elk in the park and in the seven national forests surrounding the Yellowstone. The elk range over much of the park and are easily seen at a distance by the Dudes and the Sagebrushers.

The elk is a magnificent animal, noble, stately, as large as a horse. The bull elk, adorned with large, well-proportioned horns, is just about the handsomest animal in the parks. When running, he makes a magnificent picture. In September and October, during the mating season, his shrill bugle or challenge, ringing through the crisp air on a moonlight night, is one of the most thrilling sounds of the mountains. The elk, though easily seen at a distance, is wary of humans and the visitor who wants to take his picture must stalk him slowly and cautiously.

Being a grazing animal, the elk will not rustle for food at the higher levels when the snows come. He moves to the lower altitudes, seeking grass. Late in the fall, when the storms become bad, great herds of elk may be seen leaving the park and the adjoining game preserves, moving out into the area where they are unprotected. This is the time when hunting is permitted in the neighboring states. Many

elks are killed by hunters, sometimes under revolting circumstances. Often the great animals are mowed down with repeating rifles by hunters behind rocks. There is no chance to scatter. Knowing only the complete protection afforded in their summer haunts, the elk are like lambs slaughtered in a farmyard. The rangers fail to see the sportsmanship of shooting the elk down in herds. Each hunter is allowed but one elk, and it happens at times that after wanton killing there are dozens of animals left on the snow after each killer has selected his victim.

Terrible as are these slaughters, there was one other practice of the hunters that stirred the rangers to even greater anger. That was the practice of extracting the two large teeth from elk which were foundered in the snow, while the animals were too weak to resist. These large teeth were prized by jewelers for good-luck pieces. They were also needed by the elk to masticate his food, and without them he was unable to forage for himself and starved to death. Sometimes the great animals were illegally shot by poachers for their teeth only. The body of the elk was left in the snow, where the hunter ended the animal's life.

Of recent years the Benevolent and Protective Order of Elks has co-operated with the rangers to fight the cruel practice of stealing teeth from the elk. Use of elk teeth has been outlawed by the order. Likewise, public-spirited citizens assisted financially in the purchase of several ranches north of Yellowstone Park where the elk can graze under protection during the long winter months under the watchful eyes of their ranger guardians.

Elk are found in smaller numbers in Glacier and Rocky Mountain parks. In the latter park they are the offspring of animals shipped from Yellowstone after the native herds

had been wiped out by hunters. Elk once ranged the slopes of Mount Rainier, but this species, larger animals than the Rocky Mountain elk, are now confined to the Olympic National Park, although a few of the other species are known to be within the boundaries of Mount Rainier Park. For many years, in fact until 1933, a band of San Joaquin Valley, or "Tule" elk were maintained in Yosemite Valley. It is a smaller and different species from those of the Rockies and Olympics. The Yosemite band is now in the Owens Valley between Death Valley National Monument and Sequoia National Park.

Antelope may be seen in Yellowstone, Wind Cave and Grand Canyon Parks and in several monuments. These beautiful little animals, fleet of foot and alert of sense, once ranged the plains east of the Rockies in tens of thousands. Now the herds in the parks number about one thousand. They are practically extinct in most states, though in Wyoming, Oregon, New Mexico, Arizona and Nevada they have made a notable increase under wisely administered game laws. There are also some bands in California, Montana and Utah. For a time it seemed certain that this interesting little animal was doomed to extinction, but in recent years they have rapidly increased in numbers.

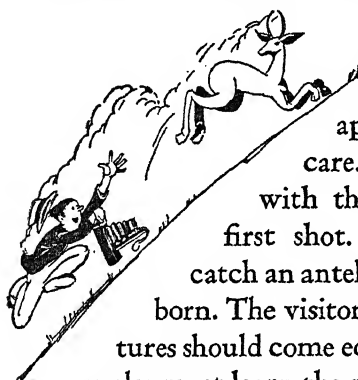
The antelope is easy prey to predatory animals, especially while young. It is an interesting fact that the little antelope is born without scent and his fur so blends into the landscape that it is almost impossible to see him, even at fairly close range. It is said that if the tiny antelope remains still, a coyote can neither see nor smell him at twenty-five feet distance. The antelopes of the Grand Canyon herd were raised by the rangers from tiny kids, captured in northern Nevada. They were reared on bottles

near Reno, then were shipped to the park. On their arrival in crates they were strapped on pack mules and taken down the Hermit Trail to the Tonto Plateau. There they have grown to full maturity and are rearing their young naturally. In recent years, these antelopes have moved eastward on the Tonto Plateau and can be seen near Indian Gardens on the Bright Angel Trail.

Because of his grace, color, and beauty, the antelope is a great favorite with amateur photographers, who in their eagerness to get a good snapshot approach the animals without care. Often they try to catch up with the antelope, if they miss their first shot. The photographer who can catch an antelope on the run has not yet been born. The visitor eager to take good animal pictures should come equipped with long-range lenses, or else must learn the patient art of stalking wild life.

Any sudden movement frightens wild animals and ruins the picture not only for the photographer but also for others to come. Those who are successful in taking wild-animal pictures have developed a fine technique. The Crown Prince of Sweden, an experienced photographer of wild life, crawled a quarter of a mile on his hands and knees and finally on his stomach to take pictures of mountain sheep on Mount Washburn in Yellowstone.

The photographer must have infinite patience. He must keep his friends out of sight, as well as himself. He must move ever so slowly and cautiously toward the animals, or else sit patiently and wait for them to come to him. Or he can set up his camera in a spot which animals are



known to frequent and pull the trigger by means of a thread. The telescopic lens fitted to his camera will help bridge the distance to his "shot." The rangers will give him pointers on where to find the animals and how to get the pictures. Most of the rangers are wild-life camera fans and have taken good pictures. They have found, as the visitors will also, that hunting with a camera is vastly more sporting and exciting than is hunting with a gun, particularly with the light hand motion-picture cameras which show the movements of these inhabitants of the forest.

In addition to the animals already mentioned, there are literally scores of varieties of smaller animals and birds, and also that interesting but not universally beloved group, the predatory animals. The latter include mountain lions, bobcats, wolves, and coyotes—the born killers of the forest, some of which kill for the mere love of killing, the same motive that seems to animate mankind except that the predatory animals do need to kill for food. These animals are seldom seen, with the exception of the "dogs," as the rangers call the coyotes. This species is sometimes hunted by the rangers, not with the purpose of extinction, for the coyotes belong in the wild-life picture of the parks, but for the purpose of curtailing their numbers so that they will not exterminate other species, such as the deer or the antelope. Mountain lions have not been killed in any of the parks for many years, except in rare cases and for scientific reasons. The mountain lion raises cubs but once every two years, and therefore does not increase rapidly. Unless a particularly ruthless killer becomes a menace, the lion is protected. The same is true of the bobcats, lynxes, and wolves. The coyote is a prolific breeder, on the other hand, raising a litter of puppies each year. Hence the coyote is hunted more

or less. The purpose of the National Park Service is to preserve the natural status quo between native animals as nearly as possible under the peculiar circumstances by which so many species have been crowded by civilization into comparatively small areas. Exotic species of animals and fish are excluded from all national park areas.

The Dude or the Sagebrusher with a hankering for a hobby that is different will find unique opportunities in the study of the animals and birds of the parks. Living with the denizens of the woods as neighbors, he will marvel at their energy, their persistence. He will wonder at the ingenuity of the steam-heated birds' nests of the Yellowstone geyser basins. He will tremble at the isolation of the osprey's nest atop tall pinnacles in the Canyon. He will laugh at the story of the male osprey whose mate makes him sit on the nest at night so that she can know where he is. The audacity of the grouse family that held up a presidential party while the chicks crossed the road, the lightning quickness of the osprey as it dives into the rapids, returning over the tree tops with a struggling fish in its talons, the genius of the otters who live in winter in warm-water pools just a few feet from icy trout streams, the muskrats that enjoy salad in the wintertime because the warm streams they inhabit keep the grass and plants growing during freezing weather—all these and many more true tales of wild life serve to make up the saga of the great game preserves, the national parks. It is intriguing and stimulating, and many is the visitor who feels the urge, along with the rangers, to take his pen in hand and put it all on paper, perhaps in verse as did a ranger in Sequoia Park after watching the uncontrollable invasion of exotic 'possums into that region:



'Possums from Missouri, that's what the people say,
Moving to Sequoia and now well upon their way.
'Possums coming singly, others come in pairs,
Mothers carrying baby ones in pouches lined with hairs,
Big 'possums, little 'possums, lean ones and fat,
All moving to Sequoia—now what do you think of that?

GOIN' FISHIN'

"Oh, Ranger, where can I catch some trout?"

Sometimes that question is a hard one to answer. It isn't always the fault of the fish, either. There are anglers and anglers. Some seem to be able to step out and catch trout in the morning, in the evening, any time. Others have no luck, even when they are wearing a rabbit's paw, a horseshoe, a turkey wishbone, and a Columbian half-dollar, all at the same time. The wary trout is no respecter of good-luck omens. Catching him calls for a indefinable something that some call fisherman's luck, that others call skill—whatever it is, you need it when you are goin' fishin'.

Knowing where the fish swim is half the game, when you are goin' fishin'. There isn't much use fishing in waters where there are no fish to be tempted by your lure. When Herbert Hoover was honorary president of the Izaak Walton League, he declared in an intriguing article that it should be the inalienable right of every American to catch a nice string of fish at least once each year. He touched upon the ennobling and uplifting effect this would have upon the American's soul, and indicated that as a panacea for unrest, discontent, and so on, there was nothing in the world like goin' fishin'. He advocated the expenditure of sufficient funds to see that all good fish waters of the country be adequately stocked with the right kind of fish. Then at least the fish would be there to be caught, and the man who could not catch his share would have nobody but himself to blame.

The rangers know the spiritual benefits of going fishing

and have subscribed for a long time to the proposition that everybody ought to catch a mess of fish now and then. They have made considerable headway already in stocking the barren waters of the national parks. To do this they have on numerous occasions carried cans of tiny trout to remote streams and lakes high in the mountains, sometimes on horseback, often on foot, strapping the cans on their backs. That is work, as anyone who has carried a five-gallon can of water for five miles over a rocky trail can testify. These baby trout are known as fry. When the ranger with a can of fry arrives at a lake to be stocked, he gradually fills the can with water from the lake, to accustom the little fish to the temperature of the water so that the dive into their new home will not be too great a shock to them.



After a barren water is stocked with fry it takes several years for it to become a good place for fishing. Hence the planting of fish must precede the building of trails or roads which make the lake or stream accessible to the angler. From six to eight million trout fry are planted in the national parks waters each year. This is but a small beginning compared to the billion nearly grown trout which Mr. Hoover and the Izaak Walton League would like to have planted each year, but it is a start. Of course, the various states plant many other millions of fish. The propagation of fish has passed beyond the experimental stage. It has been demonstrated in the national parks that it is possible to keep more trout in the streams and lakes than the anglers can pull out

with the aid of flies, spinners, and other lures, not overlooking the humble angleworm, who is frowned upon in the best circles but who manages to retain his standing with

small boys everywhere and with certain other older fisher folk from "down East."



In the national parks the rangers, in the course of their plantings, have learned some interesting and important facts about the rearing of fish. One of the most fundamental lessons is that it is unwise to mix breeds of trout in the same

lake or stream unless their habits of life be quite similar. All fish, and trout in particular, are cannibalistic. The trout must be protected not only from destruction by greedy humans or by stream pollution, but also from other members of the finny tribe. Consequently, it is advisable in the parks to reserve a certain water for a particular variety of fish and raise another kind somewhere else. That system makes the sport more interesting for anglers too.

Yellowstone Park offers an illustration of this. The native trout of the Yellowstone is the cutthroat, or the redthroat, as the species is sometimes called. The cutthroat is a fine, gamy fish, growing to good size, a popular trout with anglers. In the early days, before the authorities had studied trout propagation, other trouts were imported and planted in the same waters with the cutthroat. The rainbow was brought from California, the brook trout from the Atlantic Coast streams, and the Loch Leven from other distant points. The cutthroats and the rainbows spawn in the spring.

The trout brought from the East spawn in the autumn. Spawning fish are too occupied to be eating each other's eggs but in with a combination such as we have in Yellowstone the Eastern trout prey on the eggs of the Rainbow and the cutthroat in the spring and the latter prey back in the autumn. The great destruction of eggs and fry may be due to the presence of fish that spawn at other seasons.

The National Park Service and the State Fish Commissions try to regulate the fishing seasons so that no fishing is done while the trout are spawning. However, in the Yellowstone where trout are spawning, both spring and autumn, this is practically impossible. Of course, it is too much to expect the chap who has come a thousand miles to go fishing to throw back the fine trout he has just caught because it happens to be of the species spawning at the time. Most of the experienced anglers do that, not only to assist in the task of keeping waters stocked, but also because spawning fish are not the best eating. The meat is somewhat soft and lacks the fine taste it would have at other seasons. This is a practice that should be encouraged. If the fish is handled with moist hands when removed from the hook, there is usually no serious injury inflicted. Thrown back into the water, the grateful trout swims off, a wiser, more wary fish thereafter.

The rangers realize that these technical aspects of trout life are not so interesting to the Sagebrusher as the answer to the question, "Where can I catch some fish?" The Sagebrusher has driven a hundred miles that day, his mouth watering for trout. Even as he cross-examines the first ranger he meets, he can smell those trout frying in the pan. Already he has separated the old rod from its case and he craves action immediately. It is the ranger's job to direct him to the lake where fishing is good, and it is not the angler's worry

that the rangers have to stock the waters yearly to keep the fishing good.

The Sagebrushers are the fishermen of the national parks. And the fisherwomen, too. They can stop and pitch tent wherever they find a good fishing hole. Travelers with pre-arranged schedules find it difficult to take time for fishing. Angling for trout can't be done on an itinerary. The trout are the greatest little itinerary busters in the world. Give a normal, growing, healthy trout half a chance and he will ruin the most adamant itinerary. The rangers saw that happen when the late President Coolidge came to the Yellowstone. Advance agents worked out in fine detail a schedule of travel, with every move timed to the minute. It lasted only until the presidential party reached Yellowstone Lake, where the cutthroats got into the Coolidge itinerary and what they did was plenty.

That's the way it goes. Strong, hardy men, of sterling character, leaders in the church and respected in their communities, will go out with a rod and reel swearing by all that is mighty that they have but an hour to spare and promising their wives to return for dinner. Do they? Why, just the "goin' " part of goin' fishin' takes that long. First there is the ceremony of hauling out the old pipe (a special one used only when the annual assault on the trout is made!), scraping it, knocking it on the trunk of a tree, stoking it, coaxing the fire in its bowl, tasting the first few puffs with meaning smacks of the lips, and then getting down to business.

Next comes the luring of the lures out of the lining and the band of the old hat, used the year before. This practice is frowned upon by the more particular anglers nowadays, who hold that flies should be kept in fly books. Even so, bringing them out, inspecting them and talking about them,

reviewing the artillery and soaking the leaders, is quite a ceremony. Then there is the rod to be pieced together and strung with the best line in the U.S.A., something owned by every other angler himself in person. After a few flourishes of the rig as finally assembled, the angler addresses himself to the waters and the fly whistles over his head and out where a trout "ought to be." Sometimes he is. Wham! The line is jerked taut and the match is on, a battle of wits between a flashing, zigzagging, fighting trout and an excited, eager opponent on shore or in the boat, the odds somewhat against the trout at that turn of the game.

Sometimes the best of charms fail, and one by one the pretty flies find their way back into the hat lining or into the fly book, and at last out comes the old spinner that did the work the year before, a last resort which fly fishermen always seem reluctant to use. There is many a lure between the Royal Coachman and the humble angleworm, and though most anglers are too proud to use anything but flies at the start, their pride unbends after a few hours and many are the tricks that are played on the poor trout. He is offered rubber minnows and wooden frogs and bright-colored what-nots until he just cannot keep his appetite in curb.

One sees some odd outfits in the parks. Travelers are always looking for compact equipment. Some of it is excellent. The experienced angler, of course, knows exactly what he wants, and seeks no advice. But for the novice, a few suggestions about fishing equipment may not be amiss. Everyone cannot afford the elabo-



rate and costly complete outfits. The beginner at this royal sport often prefers to rent fishing tackle at the stores found in all of the national parks. That is economical, but it is not so satisfactory for the Sagebrusher who may want to stop and fish en route from point to point.

Those who yearn to fish ought to equip themselves with good tackle. Beginners sometimes have trouble with the split bamboo rod, which must be handled carefully when you get a fair-sized trout on the end of the line. If you jerk him into the air you may break the delicate tip, if not the whole rod. An angler must know just how much strain the rod will stand. It takes experience to learn how to play your trout until he is tired out and ready to be dragged in. It is not a bad idea for the novice to try a steel rod at first, one capable of standing hard knocks. Besides, a steel rod can be used for trolling, but if there is any casting to be done, it takes a good line to achieve the snare and delusion.

Leaders are essential in fly fishing and trolling and must be kept in good condition. If carefully preserved, leaders will last a long time. They must always be soaked before using, of course. The weight and strength must be in proportion to the fish to be caught. Never try to land a ten-pound Mackinaw with a leader made for one-pound fish. Many people just learning to fish tie spinners and even flies right on to the line and throw them out into the lake or stream. This is bad, for the simple reason that the fish can see the line. The leader has a definite and important value, that of deceiving the fish into thinking the artificial fly is a real one.

The reel is an important part of fishing tackle and the advice to give about reels for the beginner is to get a good one.

A weak reel will let your line run out and will even tangle

it up in winding or unwinding. Of course, many experts prefer the automatic reel, but it is not a necessary part of the ordinary equipment and it takes skill to use it effectively.

Getting down to lures, here again experience counts a lot. Bait fishing makes possible the use of a small variety of lures. The spinner is more effective at certain times than at others. When fish are feeding deep, they will not rise to a fly. Trolling is the only way to get them.

Spawning fish, especially females, will fight a spinner, and at the spawning time of the year the spinner will furnish a lot of fun to the person who does not realize that every time he catches a spawning female he destroys a lot of good future fishing for somebody.

Everybody who aspires to be a fisherman should learn to cast. The fly fisherman gets the most sport out of his angling. It takes time and patience to learn, but it is a fascinating pastime. He who once catches the spirit of fly casting will stand and cast for hours at a marker practicing the fine points of the game. The choice of flies, of course, depends on what the fish will bite. The best thing to do upon arriving at a new lake or stream is to watch the water and see what the fish are jumping for, if they are jumping at all. If the trout are after a dark insect, use a black gnat or brown hackle or some other dark fly. If moths are flying, use bigger flies of the same color as the prevailing moth or other large insect. One should have a fairly good variety of flies, both large and small, light, dark, and medium, and keep them in



a fly book and not around the hatband—although a few flies in the hatband do help give the impression that one is really goin' fishin'.

After the trout have been caught, they should be carefully cleaned, and the fisherman should do this himself. The real angler never takes the fish to camp for the women folks to clean. A good fisherman can clean a fish in less time than it takes to tell about it, and he ought to do it as part of the day's work. As a matter of fact, it will be the only work of the day, since everything else is great fun. Most Sagebrushers like to fry their fish over the open fire and that is the best way to cook them. Fry them in bacon grease and serve them with a little bacon. Dutch-oven biscuits with fish and coffee at night, and flapjacks with them in the morning, are camp meals de luxe.

Have you ever heard of a "ranger sandwich"? It is made of the left-over supper biscuits, the left-over morning hot cakes, the left-over bacon and fish from both meals, a little butter, and, if eggs were left over, put them in, too. This combination sounds terrible, but next day about noon, if one is walking, fishing, or riding horseback in the fine fresh air, a "ranger sandwich" will taste better than



the best meal the hotel can put up. Besides, it is economy in the use of food, an important consideration in the mountains.

The lure of trout fishing isn't entirely in the catching of fish. It is in the uncertainty of it, the sporting element, the gambling of time

and wits against the habits of the trout. Sometimes it would seem that anglers are greater fish than the trout. They will bite on anything! They will trudge miles upon miles, with nary a grumble, because somebody has told them of seeing whopping big trout in a certain remote lake. That recalls a fishin' story. One time when a newspaper writer was visiting Yellowstone he noticed a big club near the cabin occupied by a ranger stationed at Slough Creek.

"What's the club for?" asked the writer.

"Aw, that's my fishin' club," explained the ranger.

"Fishin' club?"

"Yeah, fishin' club. I take it when I go fishin' down the stream. There's a big trout in there that's grabbed every fly I had but one and bit the leader in two. I take the fishin' club along to whang the big devil over the head and drive him away so I can catch some of the other fish."

That story soon appeared in the papers, and during the rest of the summer Sagebrushers kept dropping into the office to ask the location of the stream with that big fish in it that had to be hit over the head with a club. Some of them displayed the double, extra-heavy deep-sea tackle they had brought along with which to drag the "big devil" out of the water.

At that, deep-sea tackle is hardly too heavy for some of the big fish occasionally caught in the western parks. In Glacier and Yellowstone parks, lake or Mackinaw trout twenty to thirty pounds in weight have been caught from the deep waters, while in Yosemite they occasionally catch German Browns that weigh almost that much. These big fellows will not rise to a lure, as a rule, and must be attracted by bait, lowered with sinkers. The big trout are not sporty. As age and size creep upon a trout, he becomes less

interested in the active life. He feeds on the bottom of the lake. His meat is often not as good as that of the younger and more active fish. The big fellow simply uses his weight and strength to break the line, if he can. He uses none of the tricks of the one- to five-pounder.

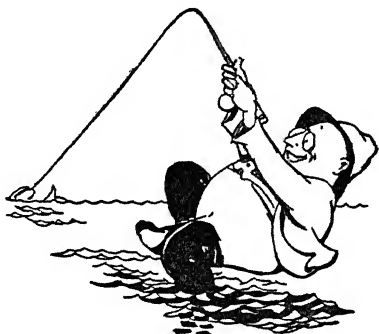
Fishin' stories!

Joe Douglas who for many years was assistant chief ranger of the Yellowstone used to spin some good ones. Doug was a practical fellow, a good woodsman, a superb horseman and a first-class packer. He was an old Army packer before becoming a ranger. He was supposed to know something about mules, as well as fish. Until he told the following story, Doug had an enviable reputation for veracity.

Doug and a companion were out on a pack trip and ran short of rations. They pitched camp alongside an attractive trout stream. Doug is so sure of his angling that he is always counted upon to supply a camp with fish. So, after turning their horses and the pack mule loose to graze in the meadow, Doug turned to fishing. They were biting that day. As he caught them, Doug tossed the trout on the bank a safe distance from the stream and cast out for more, planning to gather them up as he returned to camp. Within a short time he had landed twelve fine trout. He cut a forked stick on which to string the fish and turned just in time to see, to his amazement, his pack mule devouring the last of his catch. The mule had followed him stealthily and eaten every trout he caught. Doug insisted this is not a fish story but is a true account of mule- and fish-facts.

Then there is the famous Jim Bridger story of the mountain climbing trout he saw in Yellowstone, fish which could "pack over the hump of the Rockies," the

continental divide. That was regarded as a colossal lie until Two Ocean Pass was discovered. The pass also explains how trout climbed above Yellowstone Falls, into Yellowstone River, and into the lake of the same name. It is really a deep, meadow-covered pass in the continental divide with two connecting streams, Atlantic and Pacific creeks, each flowing ultimately into its respective ocean. Fish can easily move from one stream to another. There can be no question but that the cut-throat trout came over into the Yellowstone headwaters from the Pacific Slope via the Snake River and its tributary, Pacific Creek.



"In which park will I find the best fishing?"

The rangers hear that question frequently, especially when they are away from the parks on visits to the cities. The answer is, there is good fishing in practically all of the parks, though it is better at times in some than in others. There are different kinds of fish to be caught, and the angler's preference in the matter of fish must be considered. Experienced anglers have their affections for certain kinds of fish and look upon all other members of the finny tribe with something approaching disdain. The steelhead angler insists there is no fishing like steelhead fishing, while the golden-trout devotee claims the steelhead isn't even a trout. So there you are!

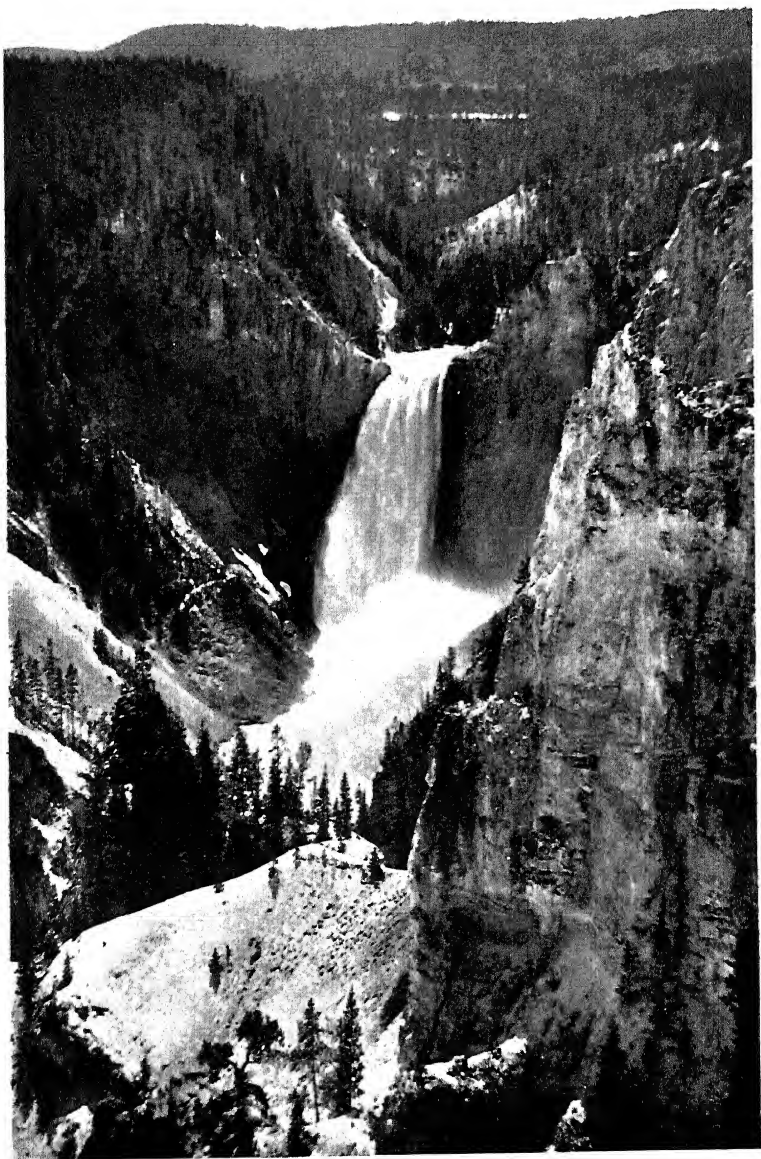
Most of the fish found in the national parks are trout. The lakes and streams of the parks are at a high elevation. In these icy waters, fed continually by snows and glaciers,

the trout is right at home. The trout likes cold water. In the Lyell Fork of the Tuolumne River in Yosemite Park the trout go so far upstream that they almost reach the ice of the melting glaciers. In these high, cold waters trout do not grow to large size, but they are far more delicious eating than the big fellows found farther down stream. The different varieties of trout found in national park waters are as follows:

The rainbow, so called because of the shafts of color that run lengthwise on his body, is a native of California. The rainbow is found in natural state in Yosemite, Lassen Volcanic and Sequoia parks. This fish seldom weighs more than two pounds, but he is the gamest, hardest-fighting trout of all, and is a great favorite with anglers. The meat of the rainbow is usually pink, almost the color of salmon. As a matter of fact, many of the trout belong to the salmon family, being really fresh-water salmons. The rainbow has been successfully introduced into Yellowstone, Mount Rainier, Crater Lake, Rocky Mountain, and other parks.

The golden trout, a native of Sequoia Park, is the most beautiful of trout. This fish is usually found in small streams and does not grow very large, although in certain lakes it has been known to weigh two pounds or more. The face of this trout is olive, its sides and belly are a light golden, while down the middle of its sides are scarlet stripes. Along the middle line of the belly is a scarlet band. Dr. David Starr Jordan, who first described this trout, named it *Salmo Rooseveltii*, in honor of President Theodore Roosevelt.

The cutthroat, or redthroat, so named because of the deep red dash or blotch between the branches of the lower jaw, is the native trout of Yellowstone, Glacier, and Rocky



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GREAT FALL FROM POINT LOOKOUT, YELLOWSTONE NATIONAL PARK



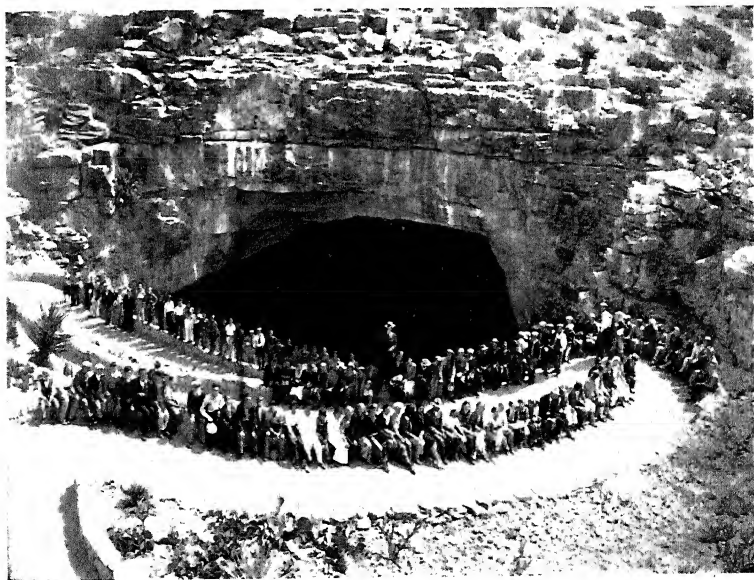
OLD NATIONAL PARK STAGECOACH



A BUFFALO ROUND-UP IN YELLOWSTONE



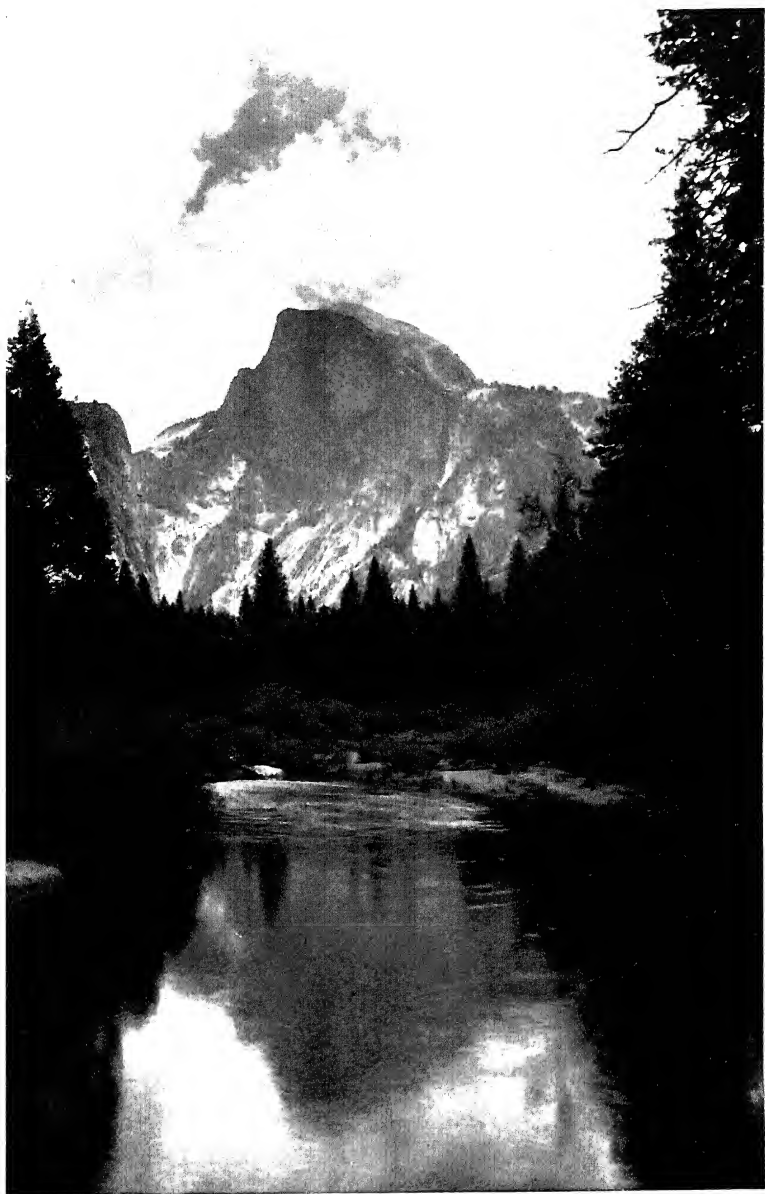
SAGEBRUSHERS CAMPING AT PARADISE VALLEY, MOUNT RAINIER NATIONAL
PARK



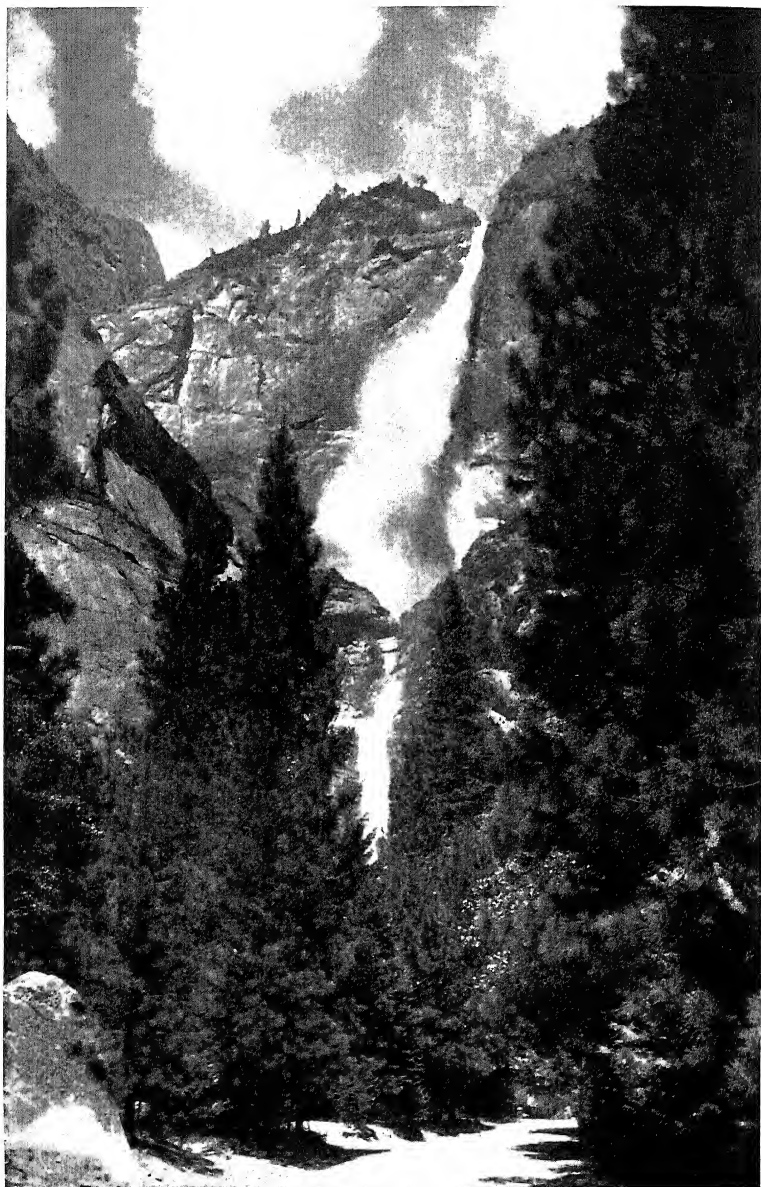
THE GROUP PREPARED TO ENTER CANYON CAVERNS



ACADIA NATIONAL PARK, MOUNT DESERT ISLAND, MAINE



HALF DOMES AND THE MERCED RIVER, YOSEMITE VALLEY

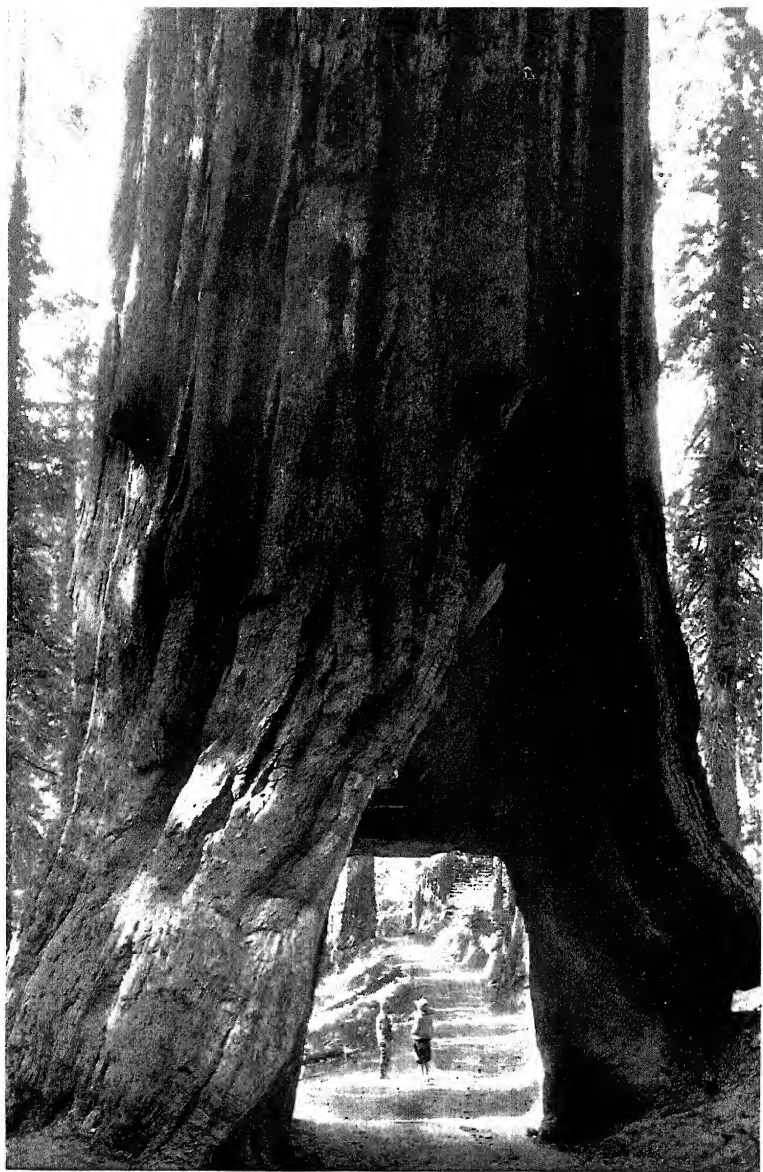


George E. Stone Photo

YOSEMITE FALLS



THE VIEW FROM GLACIER POINT, YOSEMITE NATIONAL PARK



THE WAWONA TREE, YOSEMITE NATIONAL PARK, A SEQUOIA SO HUGE THAT
THE ROAD PASSES THROUGH ITS TRUNK

Mountain National parks. It is found mainly in the higher waters of Yellowstone, and above the falls. The cutthroat normally grows to be a good-sized trout, two to four pounds in weight, and occasionally is found much larger, even running up to ten or more pounds. Where the cutthroat is the native trout and where it thrives we keep exotic trout out of its waters. The cutthroat is a gamy, tasty fish, much appreciated by fishermen.

The German Brown is a trout imported from Europe. He is usually the color of the bottom of the stream or lake he inhabits, and is hard to see. This trout is distinguished by the dark brown spots on the pale brown body. This was the "brook trout" of England, made famous by Izaak Walton in his memorable work, "The Compleat Angler." The German Brown grows to a large size, if he escapes the fisherman's bait, in Yosemite attaining ten to fifteen pounds.

The Loch Leven was imported to the United States from the lakes of the Scottish Highlands. It originated in Loch Leven, immortalized in Sir Walter Scott's poem, "The Lady of the Lake." In markings, the Loch Leven is much like the German Brown, dark brown spots on a light brown body. It is a much more lively fish than the German Brown and is found in many of the lower-level lakes and streams of the parks.

The eastern brook trout was brought to the national parks from the lakes and streams of the Atlantic Coast.



It is a light colored, bright, speckled trout, often called "the speckled beauty." Eastern brook trout grow to larger sizes in western waters than they do in the East. It is a favorite trout in the eastern national parks streams.

The Dolly Varden, or bull trout, sometimes called the red-spotted trout, is a stoutly built fish, with a large head and a broad flat snout. It is olive colored with red spots about the size of its eyes. These spots are red on the sides of the fish and paler on the back. It is found in Glacier and Mount Rainier National parks and is abundant in streams of the West.

The Mackinaw, or lake trout, is the fish for the angler who wants to have his picture taken with a big one. These trout attain three feet in length and weigh twenty pounds in some of the lakes and larger smooth-water rivers. The Mackinaw has light spots of a reddish tinge on a dark or pale gray body. The Mackinaw lives down deep in the water. To capture him it is necessary to use bait or spinners well weighted for a lure. He is not a fighter, but because of his great weight and strength will play havoc with light tackle.

In addition to the trout there are two other fine fish found in the Rocky Mountain national parks: the grayling, a native fish, slender, graceful, beautiful, with pearl-like luster, large hard fins, a good fighter, but not large, usually from one to two pounds when full grown. The grayling has white meat, is good eating, and resembles the trout in habits. The Rocky Mountain whitefish is similar to the grayling, with smaller fins. He has a sucker-like mouth and must be handled with care by the fisherman. The whitefish, unlike the grayling, is not sporty, and is sought only because it is good eating.

Occasionally other kinds of fish are found in the waters of the parks, but not frequently. In the early days, when the stocking of streams was a haphazard matter, largely in the hands of well-meaning individuals, fish of many kinds were planted in the streams and lakes. Gradually the trout have been eliminating the others, and sometimes have eliminated other trout. If a native trout will not live in a certain lake or stream, then the rangers try



another kind. In some lakes in Yellowstone they have tried practically every variety of trout, without success. Sometimes this is due to lack of food, sometimes to peculiar contents or to temperature of the water. In view of this, it is always well to talk over your fishing plans with a ranger when you enter a park. He can at least save you the time you might spend fishing in waters where fish cannot live. And he may be able to tell you just where you can catch them.

To recapitulate, park by park, these are the kinds of fish that anglers may expect to find in the different parks they visit:

In Yellowstone, the native is the cutthroat, which is the only trout found in the eastern half of the park. In the Gibbon River and in the lakes at its headwaters, there are rainbow trout. Brook and Loch Leven trout are found in the streams on the west side of the park. Mackinaw are in the Snake River and in Shoshone, Lewis, and Heart lakes, and are found just south of the park in Jackson Hole lakes.

Grayling are found in some of the lakes and streams of the Madison River water shed, and whitefish in the lower Yellowstone River and in the Madison. No fishing license is required in Yellowstone Park.

In Glacier National Park, the native trout is the cutthroat. Rainbow trout, Dolly Varden, eastern brook, and grayling have been introduced, and lakes are well stocked. No fishing license is required.

In Rocky Mountain National Park, the native is the cutthroat. Rainbow and eastern brook have been planted. Whitefish are also found in the lakes. A Colorado state fishing license is required and can be secured in the park.

In Mount Rainier National Park, fishing is sometimes difficult, due to "glacier milk" in the waters of streams. The glaciers empty quantities of ground rock into the streams each summer. Yet many trout are caught each year in this park, rainbow, cutthroat, Dolly Varden, and brook. No fishing license is required.

Crater Lake, having no streams flowing from it, was not stocked with fish when discovered. One of the pioneers of Oregon, Will G. Steel, superintendent of the park for several years and later United States Commissioner there, took it upon himself to carry trout to the lake in cans. They have prospered, and now Crater Lake offers good rainbow and black-spotted trout fishing. No fishing license is required. An interesting sidelight upon the introduction of fish into Crater Lake was the problem of finding food for the fish. The trout at first failed to grow because of the scarcity of fish food in the lake. A fresh-water shrimp was finally found that grew rapidly in the lake and the trout began to grow large and fat as soon as the shrimps became plentiful.

In Lassen National Park the streams are well stocked with the native California rainbow trout. The usual California fishing regulations prevail here and a California license is required.

Yosemite National Park, with more than three hundred lakes and streams, is well stocked with trout. More than a million fry have been planted each year for several years in the waters of this park, and a new rearing pond in Yosemite Valley now supplies the park with fingerlings. The native trout is the rainbow. In addition there are German Brown, eastern brook, Loch Leven, cutthroats, and a number of other exotic varieties, among them the steelhead, always prized by anglers. The steelhead is a sea-running form of the rainbow trout, recognized by its small head, its silvery body, and its large scales. Introduced into several Yosemite lakes, this trout, ordinarily found only in the coast streams, has increased in numbers and grown to good size. A California fishing license is required, and can be obtained in the park.

In Sequoia and King's Canyon National Parks the natives are the California rainbow and the golden trout. The steelhead, Loch Leven, and cutthroat have been introduced to their waters. A California fishing license is required.

Grand Canyon National Park offered some problems when the rangers undertook to stock its waters, naturally barren, with trout. There were fish in the river, but the waters were so muddy that fishing was not attractive. In 1925, 50,000 cutthroat trout eggs from Yellowstone were shipped, 1200 miles by express to the north rim of Grand Canyon, thence 250 miles by motor truck, 35 miles by pack animals, and one mile on the backs of rangers to the waters of creeks flowing into the Colorado River on the

north slope. This was one of the most difficult plants undertaken by the rangers. During the entire distance, the eggs were packed in ice, to maintain the temperature of Yellowstone streams across the hot deserts of Arizona, until they could be planted in the cold waters of Shinumo Creek. The planting was entirely successful and fishing is already good in the streams stocked. Similar plantings of rainbow and cutthroat have since been made in Bright Angel Creek and other waters of the park. In Shenandoah and Great Smoky Mountains National Parks, the trouts are brook and rainbow. Olympic and Isle Royale Parks offer many and varied species for the fisherman.

Some of the best fishing waters in the national parks were originally barren of fish. This was due, no doubt, to the high altitudes of the lakes and streams of the parks and to the waterfalls in the parks which barred the upstream progress of the fish. The trout, like the salmon, is able to negotiate difficult rapids and small waterfalls in his search for the headwaters in which to spawn, but not such enormous falls as Nevada, Vernal, Narada, and the Yellowstone. Originally all of the northern and western waters of Yellowstone were barren of fish. Most of the better streams and lakes of Yosemite were devoid of fish, likewise those of Sequoia, Crater Lake, Glacier, and other high-altitude parks.

In their natural state trout spawn under difficulties at best. As the spawning time approaches, the fish push up toward the shallower waters, where the female selects a spot near the bank of the stream and prepares her nest by washing out the sand with her tail and pushing aside the gravel with her nose. After forming a slightly concave depression, she deposits a part of her eggs on the newly

cleansed gravel, and the male, which up to this time has been playfully swimming around the nest, emits milt upon them almost simultaneously. The female then covers the eggs with the loose gravel. The spawning, impregnating, and covering are repeated continuously until the eggs are all laid. The eggs of trout are heavy and non-adhesive. They will sink, therefore it takes current to wash them away. Often flood waters destroy all eggs laid in a stream.

When the tiny fish is first hatched, he has a large stomach, like a pollywog, which makes it difficult for him to navigate. He falls easy prey to a passing fish, which may eat hundreds of little fish in a day. Life is a precarious proposition, with the odds all against the small fish until he grows the size of a fingerling and can take care of himself.



The rangers and the representatives of the United States Bureau of Fisheries and the state hatcheries have sometimes planted in one year as many as eight million fry, just hatched, in the waters of the national parks. It is doubtful if more than one in ten survives the first year, with all the existing hazards. For this reason the rangers are gradually discontinuing the practice of planting fry, except in barren waters where the fry are safe from older fish. In many of the parks rearing ponds are being built, in which the little trout can be raised to fingerlings. In these ponds the trout are fed on beef liver. They grow rapidly, and within a year after they are hatched are well able to fight for

themselves.

Everybody, of course, wants to "catch the limit." The inference always is that the angler could have caught a great many more if it had not been for the limit. All anglers like to infer that. Limits in the national parks have varied to conform to the regulations in the different states. Most of the state limits have been too generous. Twenty-five fish are too many for one person, yet when the limit is twenty-five the sporting fisherman feels that he must catch the limit to be a good sport. In certain parks the rangers tried the experiment of holding the limit at ten fish, though the state limit is twenty-five. The limit of ten proved entirely satisfactory to most fishermen. They wanted to be able to say they caught the limit. One way to increase the sport of fishing for a limit of ten is to fish with barbless hooks, from which the trout may escape if the line is not taut. Barbless hooks do not injure the fish, and if the limit is passed they may be thrown back.

The greatest fishing spot in any of the parks is the Fishing Bridge of the Yellowstone River, just below the lake of the same name. This is the outlet of the lake, and here the cutthroats gather in great numbers, working up the stream to the lake. On the bridge crossing the river one can count as many as fifty fishermen at a time, and every one of them seems to be catching fish. Sagebrushers love to camp by this spot so that they can fish early and fish late, without being far from camp, and recently the rangers laid out a large campsite there. Walk through it any evening and you will find trout frying in the pan over almost every campfire.

Fishing in the Yellowstone brings some unusual thrills, with the great variety of streams and lakes, the beauty of

swift-flowing waters of the big rivers and small creeks, and the thought that some of the cutthroat may have crossed the continental divide through Two Ocean Pass; but the greatest of all thrills is "the music of the lakes." Ever since the Yellowstone was discovered, on Lake Yellowstone and on Shoshone Lake, strange sounds, sometimes like moans, again like the low humming of a tune, and again like sweet music, have been reported by anglers. Curiously, the sounds are heard when the air is still, the sky clear, and the water smooth as glass, and rarely ever except in the morning.

These strange sounds were first described in the early 'seventies. In 1891 Professor Edwin Linton of Washington and Jefferson College, and Stephen Forbes of the Illinois State Natural History Survey, had an experience which Dr. Forbes described as follows:

"Here we first heard, while out on the lake in the bright still morning, the mysterious aerial sound for which this region is noted. It put me in mind of the vibrating clang of a harp lightly and rapidly touched high up above the tree tops, or the sound of many telegraph wires swinging regularly and rapidly in the wind, or, more rarely, of faintly heard voices answering each other overhead.

"It begins softly in the remote distance, draws rapidly near with louder and louder throbs of sound, and dies away in the opposite distance; or it may seem to wander irregularly about, the whole passage lasting from a few seconds to half a minute or more.

"It is usually noticed on still, bright mornings not long after sunrise, and it is always louder at this time of day; but I heard it clearly, though faintly, once at noon when a stiff breeze was blowing.

"No scientific explanation of this really bewitching phenomenon has ever been published, although it has been several times referred to by travelers, who have ventured various crude guesses at its cause, varying from that commonest catch-all of the ignorant, 'electricity' to the whistling of the wings of ducks and the noise of the 'steam-boat geyser.' It seems to me to belong to the class of aerial echoes, but even on that supposition I cannot account for the origin of the sound."

In 1919 Dr. Hugh M. Smith, then United States Commissioner of Fisheries, had a series of adventures on Shoshone Lake with these strange sounds. The following is a part of his report on these experiences:

"The surface of the lake was glassy, the air was still, a faint haze overhung the water, the sky was cloudless, and the lake for a considerable distance out was in the shadow of heavily timbered hills. The canoe had barely gotten under way and was not more than twenty meters from the shore when there suddenly arose a musical sound of rare sweetness, rich timbre, and full volume, whose effect was increased by the noiseless surroundings. The sound appeared to come from directly overhead, and both of us at the same moment instinctively glanced upward; each afterward asserted that so great was his astonishment that he almost was prepared to see a pipe organ suspended in mid-air. The sound, by the most perfect graduation, increased in volume and pitch, reaching its climax a few seconds after the paddling of the canoe was involuntarily suspended; and then, rapidly growing fainter and diminishing in pitch, it seemed to pass away toward the south. The sound lasted ten to fifteen seconds and was subsequently adjudged to range in pitch approximately from a

little below center C to a little above tenor C of the piano-forte, the tones blending in the most perfect chromatic scale."

The sounds are still heard and remain unexplained. Hardly a summer goes by without some excited fisherman coming in with a tale about the weird sounds from the air above the lakes.

The national parks are already the rendezvous of the trout anglers. They can be made the finest fishing places in the country. They enjoy certain advantages peculiar to themselves. They are at the headwaters of streams where the water is cold and invigorating the year around, just right for the gamy trout. These waters cannot be spoiled by pollution, the greatest enemy of the fish. The winter seasons, when the parks are little frequented, give the fish their opportunity to increase and grow. In at least half a dozen of the parks there are literally scores of lakes and streams ideal for trout propagation. All that is needed to complete this picture of fisherman's paradise is sufficient money to build rearing ponds and raise the fish from fry to fingerlings.

The mellowing influence of goin' fishin' has already been mentioned. It is something that must be tasted to be enjoyed. Give a ranger the hardest-shelled, most pompous dignitary in business or public life to take out in the mountains, just fishin'. Watch him pull out the old pipe, draw down the old slouch hat, loll around the campfire with the boys. See him unbend, become "reg'lar." Keep an eye on him while he is fishing. There is hope and optimism in his eye, there is youth in his fingers as he zings out his line over the water. The way he jumps when that trout hits the line! Note that smile as he holds the speckled beauty high



for inspection! "Ain't he a fish, though!" Hear him say it. Take a deep breath as the trout hits the pan, alongside the coffeepot, over an open fire. Aroma, oh, man! What if the fish is overdone? What if the coffee is strong enough to paint a cabin? No chef could ever put into food that delicious flavor of the mountains, tasted by a fellow when he has been goin' fishin'.

"LOOK! REAL INDIANS!"

"Look! Indians! There! See them? Real, live Indians!"

The very word sets the blood a-tingle. Generations of John Smiths, Miles Standishes, George Washingtons, Daniel Boones, Kit Carsons, and other famed American fighters stir in their graves. In a flash, their exploits live again in the mind's eye. It is bred in the bones of the American to thrill at the cry of "Indians!" Some mother among his ancestors hides her children, some father thrusts a gun between the logs of a cabin wall. It is life or death.

"Bang! And another redskin bit the dust." The romantic, ever victorious fights of the dime-novel heroes flicker before the mind. In an instant there is flashed a whole history of Indian fights, the wresting of a continent from a race of red men. Many a modern American has never seen a real Indian before. In a vague sort of way, he believes the Indian is a species almost extinct. His great hope is to see a few of them outside the movies before the last of the redskins "bites the dust."

Actually, it is not true that the Indians as a race are departing from this earth. The facts are that since they ceased fighting the white men and have lived peacefully as neighbors, the American Indians have been increasing in numbers. In 1877, when the Sioux, Nez Percés, and other tribes were still on the warpath, it was estimated that there were 250,809 Indians in the United States, not counting some 20,000 Alaska natives and about 6,000 Sioux who fled under Sitting Bull to Canada, following the Custer Massacre. In 1940 the census gave the Indian population

as 333,969. Today there are almost 400,000 Indians in the United States, including 33,000 Alaskan natives.

The average Dude is not interested in Indians who have become civilized, who wear store clothes, ride in automobiles, and look like any other brand of humans. The Dude wants to see "real Indians," the kind that wear feathers, don war paint, make their clothes and moccasins of skins. Give him one such Indian and the Dude is much more excited than he would be if he had seen a whole nation of Indians at the humdrum pastime of making their living in peaceful pursuits. In fact, he is hardly sympathetic with the efforts of the Indian Bureau to make the Indians self-supporting and independent in the white man's way. It does not particularly interest him that there are remnants of 341 Indian tribes in the United States; there were more than 10,000 Indian soldiers and sailors in World War I and nearly 25,000 in World War II, including 200 WACS and WAVES; over 30,000 Indian children are in schools; the total value of Indian property probably approaches two billion dollars; the area of Indian reservations is close to 70,000,000 acres.

Even so, about the easiest place for city folks to see the Indian in his natural state is in a national park. The Indians have been closely associated with the parks since their discovery. The Indian knew the natural wonders that are the basis for the parks long before the white men discovered them. The earth's curiosities that have attracted the



white man were objects of worship or fear to the red man. They formed the nucleus of legends told by his wise men. Many of them are the red man's explanation of how the earth was created. If the Indian did not live within the shadow of a monument, or what is now a national park, he lived near enough so that his priests could perform ceremonies on proper occasions, giving due credit to the gods who were supposed to live in the waterfall, on a great cliff, or within the earth beneath a volcano or a geyser basin.

So it seems particularly appropriate that the national parks, intrusted with preserving a small part of the American continent in its natural state, should be near practically the only Indian tribes which are still living as they did before Columbus discovered America. This all came about quite naturally. The lands that are now in the national parks for the most part were not suitable for settlement by the white pioneer. Either they were too remote from cities or railroads, or they were too rugged for development, or they were set aside in reservations at an early date by the government. Since the white man did not need these hunting grounds, the Indian who lived in national park territory was allowed to go his way without much disturbance, except when he waged war on the whites.

The visitor is certain always of seeing Indians at Grand Canyon National Park in Arizona. The Canyon cuts diagonally through the heart of the Indian country of the Southwest. Immediately adjacent to the park, east and southeast, is the vast Navajo reservation, really several reservations joined together. It includes the Hopi Indian

lands. In this area live 35,000 Navajoes and 2,500 Hopis. West of the Grand Canyon is the Truxton Canyon agency of the Hualapai Indians. In the park itself is the Havasupai reservation, home to about 180 natives, all that remain of this primitive nation. Between the North Rim of the Grand Canyon and the Utah parks lies the extensive Kaibab reservation, set aside for the Piutes. However, few Indians live on this reservation.

Within the park itself, Navajoes, Hopis, and Havasupais are seen almost always at the South Rim, near Bright Angel Camp, and at other points. Perhaps the greatest object of interest is the Hopi House on the South Rim, an exact replica of one of the ancient Hopi houses on a mesa in the reservation. Here are seen real Hopis in their native costumes, the women making the pottery for which they are skilled, the men engaging in their interesting and picturesque dances each afternoon.

These Hopis are members of one of the oldest races in



the Southwest. They were a settled nation of Indians who attained a considerable degree of culture and skill at the arts. They built their homes of adobe, in the form of picturesque pueblos, situated high on the mesas where they could defend themselves from their warlike nomadic neighbors.

The Hopis, unlike the majority of the Indians, derive their living from their little farms. They keep domestic animals, raise corn, and carry on their interesting arts and crafts quite independent of the out-

side world.

By taking the side trip from Grand Canyon Park over the Navahopi Road, visitors can find the Hopis at work in their villages exactly as they lived before the Spaniards discovered and attempted to conquer this region three centuries ago. Here the Dude can see the Hopi maiden grinding blue corn, to be used in her wedding ceremonial. The Hopis raise many kinds of corn, blue, red, yellow, and other colors. Each color has a significance. They are careful in their dress, neat in their appearance. Their houses are clean, in spite of the fact that they keep their dogs and pigs in the courtyards, which often form the roof of the families living in the apartments one story below, the Hopi villages being constructed in terraces on the cliffs. The Hopis dress in colorful costumes and wear bright-colored bands around their heads. This is their chief distinguishing feature.

Navajoes are seen in considerable number in Grand Canyon Park. Many of them find employment with the government or the public utilities in the park. They are good workers and a fine nation of Indians. Until recently they were not dependent upon the government for food and shelter, being successful shepherds. Their sheep furnish them with meat for food and wool for clothing. At their villages, but usually in isolated places, where the Navajoes live in crude hogans made of brush and sticks and mud, many of the men work as silversmiths, making bracelets, rings, pins, and other ornaments, often decorated with turquoise settings. These are highly prized, not only by the natives but by the Dudes and Sagebrushers who visit the reservation. The Navajoes are great gamblers, a habit which often costs them their beloved jewelry, since the

losers must often pawn their trinkets at the traders' stores to pay their debts.

The Havasupai village is far down in the Havasu Canyon, a beautiful valley with trees and waterfalls, several thousand feet below the rim of the Grand Canyon. Here are the homes of the last of the Havasupai nation, a tribe of Indians that lived by cultivating corn, making baskets, and hunting. The Havasupais still live exactly as they did before the white man came, except that some of the men work for the government on the roads, while to their usual crops they have added melons, figs, and peaches. Once Uncle Sam built every family of Havasupais a wooden cottage, but the natives use these buildings for the storage of food and farm implements, preferring to live in their crude huts resembling Navajo hogans.

The only way to reach Havasu Canyon is via the perilous Indian trail, best described by an old Indian one day, when he said:

"I ride 'em horse home. Go down, go down some more, go down, go down some more, go down, down some more. Horse slip, I jump. Horse go down, go down some more. Catch 'em plenty dead down bottom."



The famous Snake Dance of the Hopis, held each August, usually at a different Hopi village on the reservation near Grand Canyon Park, is one of the most colorful and picturesque events of the Southwest.

Visitors privileged to see this amazing ceremony never forget it. The dancers actually carry live rattlesnakes in their

teeth during the ceremony. The dance is held for the purpose of bringing rain to the land. The snakes are supposed to carry the Hopi prayers for rain to the gods, who are thought to live underground. Curiously enough it usually does rain a short time after the dance, so the Hopis do have grounds for continuing their belief in the potency of the Snake Dance.

In the mountains west of Santa Fe, New Mexico, and above the occupied pueblos are several scenic valleys in which lie numerous ruins of ancient Indian civilizations, among them the ruins of Puye, Otowi, Tsankawi, and those in Frijoles Canyon, all of which, except Puye are in Bandelier National Monument. It has been suggested that these valleys with their interesting ruins and unique scenery, be made into a National Park of the Cliff Cities. Many of the ruins lie in, against, or on top of cliffs of tufa and other soft rock into which the early peoples could dig with their crude implements. Taos is a most fascinating pueblo. In fact, there are two great pueblos at this place, one on each side of fine mountain streams. High mountains rise back of the Indian villages and the whole scene is one of such charm and beauty that it has attracted artists and writers from all over the nation. The Taos region has three settled sections: the Indian villages, San Fernando de Taos, the American town near which Kit Carson is buried, and Ranchos de Taos, a very old Mexican town farther south. In the Mexican town is an ancient mission church.

Mesa Verde National Park was created to preserve the most remarkable ruins of prehistoric inhabitants of the Southwest that remain anywhere. There are two types of ruins, one embracing great buildings under overhanging

cliffs, and the other old pueblos on top of the mesa. The former occupants of these cliff dwellings are thought to have been the ancestors of the Pueblo, Hopi, Zuñi, and other pueblo-dwelling Indians of New Mexico and Arizona. The park is joined on the south by the Southern Ute reservation, and southeast a short distance is the Jicarilla Apache reserve.

At Mesa Verde Park the ranger naturalists tell around the campfires at night the story of the ancient dwellers on



the Mesa Verde as it has been pieced together from pottery, baskets, and other artifacts. The Indians seen around the Park today are Navajoes. They maintain the roads and trails, and in the Park set up each summer a real Southwestern Indian Village. There are always Navajo women

weaving blankets, others doing camp work, and usually Indian babies to lend color to the scene.

Occasionally the spectacular Indian Fire Play embodying the legends of the Navajo nation is produced, with Indians as actors. The great cliff dwelling known as Spruce Tree House, near headquarters, is the stage for the play and flares furnish the lights, as there is no electricity available. The actors, the stage, the lighting, and the action of the play itself make this production one of the finest things that has ever been undertaken in a national park.

Trained guides take the park and monument visitors through the principal ruins and explain to them the life and customs and industries of the builders of these great structures who thrived for centuries, then disappeared from the face of the earth.

Two of the most important national monuments lie within the great Navajo Reservation. These are Canyon de Chelly and Navajo Monuments. In the latter especially we have the interesting spectacle of Navajo Indians of today living in Canyons which contain caves and under cliffs ruins of ancient structures and artifacts left by races long disappeared. Casa Grande Monument in Southern Arizona and Aztec Ruins and Chaco Canyon in northern New Mexico are Park Service areas where Indian structures are preserved. There are many others.

Just as the parks and monuments of the Southwest offer the best opportunity to see the desert Indian at home, so Glacier National Park is the place to see the Plains Indians in real life. Here the visitor sees the picturesque and colorful tepees of the Blackfoot Indians, one of the finest tribes of Plains Indians. They were mighty hunters and valiant warriors, tall, proud, dignified, the very personification of the redskin of story-book fame. The Plains Indians ranged over the vast gentle eastern slope of the Rockies, living almost exclusively by hunting. Many were the wars they fought with the white pioneers, resisting to the last the white man's efforts to conquer and civilize them.

The Plains Indians lived an entirely different life from that of the Southwest natives. Of the arts and crafts of civilization they knew nothing. They neither wove baskets nor made pottery. On the other hand they were fine physical specimens, tall, slender, athletic, and handsome. Their food they garnered by killing animals. The skins and hides served to make clothes and to provide shelter. They were nomads, each nation by common consent or superior prowess controlling vast hunting grounds. The men hunted the animals, the women dried their flesh so that it kept all

winter long. The men had captured and tamed the wild horses, descendants of those loosed on the plains by the early Spaniards. The warriors were skilful riders.

Of all the Plains Indians the Blackfeet, so called because their moccasins were often black from walking on the burned prairie grass, were the most distinctive. Bound together by a strong racial pride, this nation was deeply concerned in resisting not only the invasion of the white man but the introduction of his ways into Indian life. Warlike, predatory, and inconsiderate of their neighbors, the Blackfeet were possessed of a strong sense of destiny. They were noble and handsome in appearance. Their features were more finely carved than those of the neighboring Indian tribes. Their complexions were lighter than those of other Indians, the men being almost tan, the women often so fair they were very nearly white. The noble bearing of their old men was extraordinary, the object of much admiration and wonder on the occasion of the visits of the

Blackfoot chieftains to Washington to see the Great White Father.



Glacier National Park was the ancient hunting ground of the Blackfeet. Within the park is a great cliff over which the Blackfeet were accustomed to drive herds of bison in their annual hunts. The buffaloes were killed by crashing to the rocks below. This cliff was a prized asset of the Indians, who otherwise were forced to ride among the buffaloes in stampedes and kill them with bow and arrow, or by the hazardous expedient of thrusting

knives into the great beasts while riding at full speed. The Blackfeet are no longer allowed to hunt in the park, since it is a game refuge, but they still pitch their picturesque tepees near the hotels and lodges and camp there during the summer. Their summer villages are of tremendous interest to visitors who love to gather about the Indians, both at the villages and in the hotel lobbies.

The Blackfeet, while usually quite solemn and dignified, have in fact a good sense of humor. Frequently, they elect distinguished visitors to honorary membership in their tribe, bestowing the honor with fitting ceremonies and giving the new members appropriate Indian names. Sometimes, however, the naming of the honorary tribesman is the occasion for a practical joke. Once they decided to take into the tribe a guide who had been friendly to the Indians but who was known as a great liar because of the extravagant stories he told the Dudes whom he escorted over Glacier Park trails. When his Indian name was translated it was found to mean literally "Sits-Up-Straight-in-the-Saddle-and-Lies."

The Blackfeet have always been proud of their mountains. They claim that they had names for all the principal features of the park area that formerly belonged to them. The translations of many of their names have been given to Glacier Park peaks, lakes, and waterfalls, such as Going-to-the-Sun, Almost-a-Dog, Four Bears, Rising Wolf, and Little Chief Mountains, Two Medicine and Red Eagle Lakes, Morning Eagle and Dawn



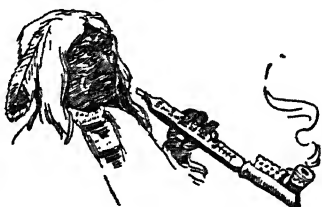
Mist Falls, and so on. The Blackfeet assert that the white man has taken from the mountains, lakes and rivers many of their best and most cherished names and has put on white men's names that do not sound so well and do not belong in the park. Back in 1915, three distinguished Blackfeet, Bird Rattlers, Curly Bear, and Wolf Plume, came to Washington to protest to the Secretary of the Interior against the use of white men's names in Glacier Park. They were promised that henceforth only Indian names or their translations would be used in Glacier National Park, and that policy is still in effect.

Other Indians in early days occupied the western part of Glacier Park beyond the continental divide. These were the Flatheads and the Kootenais, but they were inferior to the Blackfeet. Today they reside at considerable distances from the park. The old Flathead reservation southwest of Glacier Park has been opened to settlement and the Indians are seen only if the Sagebrusher explores the byways off the main highways.

Indians have figured prominently in the history of the Yellowstone. Indirectly, they were the cause of its discovery, and more directly they were responsible for its isolation for almost half a century after the discovery of the geysers, the hot springs, and the canyon and lake. Travelers and explorers hesitated to make the trip to Yellowstone for fear of annihilation by hostile Indians. For two generations the territory that is now the park was visited only by intrepid trappers.

There were four great tribes of Indians living about the Yellowstone territory. They did not live in what is now the Yellowstone, for fear of incurring the wrath of the "Evil Spirit" who was supposed to reside among the geysers and

the hot springs, and also because the country was inaccessible and there was better hunting in the valleys below the park region. The Indian name for the Yellowstone was "Burning Mountains," and it is easy to understand their superstitions. Only when they were pursued and sought refuge to save their lives would parties of Indians come into the Burning Mountains. There are still relics of their tepees along the road from Roosevelt Camp to Mammoth and in the Gallatin section of the park. These tepees were but temporary affairs hidden in the forests and erected no doubt for the purpose of hiding their smoke from their enemies. Yellowstone was somewhat of a battle ground for the four tribes who lived around it, the Crows, the Blackfeet, the Bannocks, and the Shoshones.



The Crows, or Absaroka as they called themselves, lived in the region between the Yellowstone and the Big Horn rivers and in the Big Horn Valley and mountains of that name, east of what is now Yellowstone National Park. They were great nomads and marauders. When the white settlers first came into the Montana area, the Crows stole many horses and such other property as they could carry off under the cover of night. They were expert horsemen and it was almost impossible to catch them, especially if they took refuge behind the Absaroka Range in what is now Yellowstone. Nevertheless, they were regarded as the friends of the whites, and never went to war against the settlers. They helped John Colter, the early explorer, and Crow scouts were guides for Custer's army and were with him in 1876 when he and his troops were massacred on the

Little Big Horn by Sitting Bull and the Sioux.

The traditional enemies of the Crows were the Blackfeet, the Indians of Glacier Park. Whenever roving bands of Crows and Blackfeet met, a battle invariably ensued, in which the Blackfeet were usually victorious. The Blackfeet were regarded as the enemies of the whites, though they never went on the warpath as did the Sioux. The Blackfeet, by "Pot-shooting" every white man they could find, probably killed more settlers than any of the tribes that took to the warpath. The relations of the Crows and the Blackfeet to the white men have been traced back to a comparatively small incident in the life of John Colter.

When the Lewis and Clark Expedition returned from the Pacific Coast in 1806, passing within one hundred miles of Yellowstone Park, Colter, one of the scouts, asked permission to stay in the Rockies and accompany two other fur traders working up the Missouri River. He had been away from civilization four years, yet he was ready for more of the wilderness and hardship in order to explore virgin country. In 1807, Colter, in the employ of a Spanish fur trader named Manuel Lisa, pushed up the Yellowstone River, seeking to make friends with the neighboring Indians for the fur trader. He fell in with a band of Crows and accompanied them south on a hunting expedition. The Crows met a band of Blackfeet and a battle followed. Colter quite naturally fought on the side of his friends, the Crows, and this time, contrary to the usual outcome of Crow-Blackfoot battles, the Crows were victorious. This increased the enmity of the Blackfeet for the white men, but helped establish friendly relations with the Crows. Years later the Crows became the good friends of the white traders pushing into the Yellowstone.

The third tribe of Indians was known as Shoshones. This great nation lived south and southeast of the park. The Shoshone tribes living on the border of Yellowstone were peaceful Indians. They were known derisively by the Crows and the Blackfeet as "fish-eaters" and "root-diggers," because of the manner in which they garnered their food. They dug their roots, dried them, and ground them into flour, from which



they made a pastry known as "sour dough." The Shoshones liked fish, a food which the Crows and the Blackfeet despised and would eat only when facing starvation. A branch of the Shoshones called Tukuarika, but dubbed "sheep-eaters" by the whites, actually dwelt in Yellowstone Park in the northern, eastern, and southern parts. They were a timid people, small in stature and lacking in brains and initiative. They were often seen in the park in the early days.

A fourth nation of Indians, who probably saw more of the park than any others in the early days, were the Bannocks. These lived to the west of the park in what is now Idaho. These Bannocks were a peaceful tribe who crossed the Yellowstone every summer to get to the buffalo country. They feared this crossing and preferred to keep out of the domain of the Evil Spirit, but their fear of the Blackfeet and the Crows was even greater. Consequently the Bannocks braved the Yellowstone each summer to avoid fights and to get their supply of dried buffalo meat.

Another Indian episode that figures prominently in Yel-

lowstone annals is the memorable flight of Chief Joseph and his Nez Perce Indians across the park in 1877. The Nez Percés, so named by the early French traders because this tribe pierced their noses and wore nose rings, lived in western Idaho and eastern Oregon, well outside the Yellowstone territory. They were discovered by the Lewis and Clark Expedition and made friends with the white man at once. Missionaries and traders and trappers lived among them, converting the Nez Percés to Christianity. One of these converts was Chief Joseph, an Indian of remarkable ability, integrity, and intelligence. He eventually became chief of the tribe.

The Nez Percés, by a series of treaties, ceded the white settlers important tracts of farming land within their hunting grounds. Much of this was done on the advice of Chief Joseph, contrary to the wishes of other and older counselors of the tribe, who viewed with great alarm the encroachment on the Nez Perce lands. Finally in 1877, when a gold rush caused miners to settle in the heart of the Nez Perce lands regardless of treaty rights, the young braves of the tribe revolted and several white men were slain. The fighting was against the counsel of Chief Joseph who urged patience and peace; but once the white men were killed he realized that the government would demand vengeance upon his tribe. This was the beginning of one of the most memorable Indian wars in American history.

Chief Joseph decided that the only chance for his tribe was flight to Canada. Accordingly, encumbered by women, children, and the tribe's belongings, he led the Nez Percés out of the Wallowa Valley in eastern Oregon, across Idaho, into the fastnesses of Yellowstone, across the park, and al-

most across Montana, fighting all the way, until within thirty miles of his goal most of the Indians were trapped and captured. At the start, Chief Joseph was harassed by soldiers from the west. He fought them off, outwitted parties sent to block his path, outgeneraled troops sent to meet him in Yellowstone and Montana, and in spite of his great handicaps and lack of supplies, held his band together. While in the Yellowstone, the Nez Perces encountered two separate parties of tourists, exchanged their tired horses for the fresh ones of the visitors, confiscated part of the supplies, and pushed on, with women and children, always eluding the troops. In this remarkable hegira, Chief Joseph led the Nez Perces over half a dozen mountain ranges, through passes that were considered impassable, all the time in strange country, until he reached northern Montana, the old buffalo hunting grounds of the Nez Perces.

Chief Joseph and his exhausted tribesmen were surrounded by two troops of militia on Snake Creek in the Bear Paw Mountains, within sight almost of freedom. General Miles, whose admiration had been stirred by Chief Joseph's gallant flight, persuaded the Nez Perces to surrender on condition that they would be returned to their old home. General Miles' agreement, made in good faith, was ignored by the government, which treated the Nez Perces as criminals and sent most of them to Leavenworth Prison and later to Indian Territory, where many



died; but in 1885 Chief Joseph and the remnant of his tribe were removed to a reservation in Washington. Here the old warrior lived for twenty years, aiding and counseling his people. Once he made the long trip to Washington, D. C., to visit President Roosevelt and General Miles. Chief Joseph's story is a part of that of the Yellowstone, though his people never lived in the park other than during the brief period when they sought refuge there. When the old Indian died in 1904, there passed away perhaps the most remarkable man his race produced, in modern years at least.

Just as the Blackfeet are a part of Glacier National Park, the Crows are coming to be associated with Yellowstone Park. In 1925 a group of Crows were allowed to come to Yellowstone Park and help round up the big buffalo herd. They wore their ancient hunting costumes and rode bareback as they chased the buffaloes over the hills of the Lamar River country. Crowds of Sagebrushers went out each day to see the Indians bring down the buffaloes from the mountains. One day a buffalo was killed accidentally and was given to the Indians. One old Indian remembered how to prepare it for drying, and all through the night the Indians worked on that buffalo, cutting the meat into small pieces and pounding it into thin sheets which they hung on a line to dry. The next day it looked from a distance as if the Indians had put out a big washing, as the buffalo meat occupied many long lines strung between the trees. The Indians would not eat the meat in the park. They said they were going to take it back to the reservation with the hide and head and there have a big dance.

The region that is now Rocky Mountain Park was a

favorite hunting ground of Arapahoe and Cheyenne Indians. They visited this country at all times of the year, but the higher elevations only in the summer and fall. Indian names were bestowed on many features of the park territory, and translations of them were used a long time ago by the whites, but unfortunately nearly all have vanished now. Battles were fought in what is now park territory, according to evidence revealed by rock piles and other apparently human interference with natural conditions that cannot be traced to white settlers. The Rocky Mountain Park region, especially the Estes Park open country, must have been a paradise for Indian hunting at certain times of the year, and one can imagine today great villages of tepees amid the red and yellow aspen leaves of autumn when the deer and elk come down from the higher areas with the first storms.

West of the Rockies, doubtless, Shoshones, Utes, and other tribes of Wyoming and Utah perhaps came to hunt in what is now the Grand Lake region of Rocky Mountain Park and perhaps in these remote regions there were conflicts between the parties whose year-around territories were on opposite sides of the continental divide.

The Indians of the Zion Park country were Piutes, a tribe that ranged over much of Utah, nearly all of Nevada, and into eastern California, beyond the Sierra. There were Piutes in Owens Valley in the Sierra Nevada, and in the 'sixties they were so fierce and warlike that the United States had to send in troops to quell them. Fort Independence was built as a base for these troops. Today these Indians can be seen in short side trips from Yosemite Park.

The Piutes were troublesome to the early emigrants, first to the Mormons, then to the California gold seekers.

A string of early Mormon forts was built in Utah as a protection from these redskins. One of these forts is at Pipe



Spring in northern Arizona, and is now in a national monument, protected by the National Park Service. This fort, however, was used mostly for the protection of early settlers from marauding bands of Navajoes from the Southeast.

One of the worst massacres recorded in American history was the Mountain Meadows Massacre in southern Utah, perpetrated by Piutes and the renegade whites who led them. This occurred not far from Zion Park on the road to California. An entire emigrant train was overtaken by these Indians and their white leaders, and most of the members of the pioneer party were slain.

Salt Lake City was the haven of safety and peace, the Zion of the early Mormon settlers. In southern Utah, the canyon of the Mukuntuweap Creek, a branch of the Virgin River, was a place where the Mormon pioneers of the southern part of the territory could hide from the Indians in time of danger. They called this canyon Little Zion, and today this canyon is the main feature of Zion National Park. In it and in the Parunuweap Canyon near by are many indications of prehistoric peoples. There were cliff dwellings in these canyons as well as other structures on the cliffs and on the valley floors.

In the California national parks, one finds traces of an entirely different type of Indian. The natives who live in the foothills of the Sierra Nevada are known as Digger Indians. They are rated low in the classifications of Indians.

Life was simple for them. In a balmy climate, they needed little shelter and they eked out a living on nuts, roots, plants, and such small animals as they could shoot, adding to this diet the delicacy of grasshoppers. They were of the same general type of Indian as those whom the Franciscan padres gathered in the California missions. Under the direction of the missionaries, the California Indians were fair workers, but in their natural state they developed no art other than basket making.

In Sequoia National Park, the Potwisha tribe of Diggers lived and thrived. The dividing line between their territory and that of the next tribe, the Watchumna, was at Lime Kiln Hill near Lemon Cove. The earliest visitor to the region that is now Sequoia Park was Hale D. Tharp, who came into that country in 1856. He told Judge Fry, who was for years ranger and superintendent of the park, that when he first entered the valley of the Kaweah River there were two thousand Indians along the main river and its branches above Lemon Cove.

In Yosemite Valley, there lived an outstanding and remarkable band of Indians, a branch of the Miwok tribe. They called themselves the Yosemitees, after the grizzly, a name chosen after a battle in which one of their braves overcame a great bear. The Yosemitees found in the valley of Ahwahnee, "peaceful, grassy vale," as they called Yosemite Valley, all that an Indian tribe could ask of its gods. It was a good hunting ground. It was plentiful in acorns, from which the Yosemitees made a meal. It enjoyed a fine climate, and best of all it was so secluded that the Indians were sure it would never be reached by the white man.

Under the direction of an able chief, Tenaya, the Yosemitees developed into a warlike nation. They accepted

into their tribe the refugees from other California tribes, many of them wanted for depredations on the white settlers below. In this manner Tenaya built up the strength of his fighting force, and he also became responsible for the acts of Indians whom he could not control. When the gold miners began pushing up the Merced River until they were dangerously near the stronghold of the Yosemite, some of Tenaya's braves went on the warpath, killed miners, raided and burned stores and raised havoc until the whites, in retaliation, sent various expeditions to punish the Indians. On one such occasion Tenaya and his braves, with wives and children, fled up over the mountains to the land of the Monos, a tribe of Nevada Indians with whom the Yosemite traded acorn meal for pine nuts and the obsidian with which they made arrowheads. The Monos were related to the Piutes. From the desert tribes farther east they had acquired horses and had learned to ride them skilfully. The Monos were proud of their horses.

In the hour of need, the Monos gave the Yosemite shelter and food. Tenaya accepted it gratefully. He stayed with the Monos until the white men departed from his stronghold, then he led his people back to Yosemite Valley. The Yosemite repaid the hospitality of the Monos by stealing some of their horses. Not being riding Indians, the Yosemite valued the horses only as food. When the angry Monos overtook the Yosemite, the latter were gorging themselves on horseflesh. In the battle which followed, they were no match for the Monos, who practically wiped out the Yosemite tribe, including Tenaya himself.

Lassen Volcanic National Park, in northern California, is historic ground. One of the old emigrant trails runs through the northern part of the park and is today one of

the most interesting features of the region. Northeastward are the lava beds where the famous Modoc War took place in 1872 and 1873. This war was a bitter one, and many settlers and soldiers as well as Indians were killed. The Modocs still inhabit the Lassen country and are to be found all the way up to Oregon, where their ancient contacts were made with the Klamaths; but they rarely come into the park and the visitor to that region should look for Indians in the more northerly valleys.

Crater Lake National Park is in the heart of the country of the Klamath Indians. As one goes toward the south or east entrances of this park, he passes through the Klamath Indian reservation, which has many broad mountain meadows and splendid forests. The Klamaths were troublesome when the whites first came into their territory, and the government had to build Fort Klamath and station troops there to keep the Indians quiet; but it was not long until they came under the influence of missionaries and turned to peaceful pursuits. Old Fort Klamath was a picturesque reminder of the early days of Oregon, and stood near the road to Crater Lake Park until very recently. Crater Lake Park figured prominently in the legends of the Klamaths.

The Indians west of Rainier Park and in the Olympic were Diggers resembling in many respects those of the tribes of the California coast and interior valleys. They were the Nisqually, the Puyallup, and the Cowlitz tribes, all short, flat faced, unattractive Indians who gave the white settlers very little trouble and did not quarrel much among themselves. They speared fish, principally salmon, dug clams in the sands of Puget Sound, and in summer gathered berries and roots in the hills.

Quite different are the characteristics of the Yakimas and Klickitats who lived beyond the park territory on the east. They resembled the Plains Indians. They were tall, lithe, and had strong features. They owned horses and were excellent riders. They were hunters, and each year came to the great mountain to stalk the wild goat, deer, bear, and the big elk which formerly roamed that country in large bands.

Many of these tribes worshipped Mount Rainier, which because of their religious veneration, the author John H. Williams has called "The Mountain That Is God," in naming one of the best books that has been written on the park in which it lies. The Indians viewed with alarm the efforts of the white men to climb Mount Rainier. The records of various parties which undertook to scale the mountain tell of the difficulty of securing Indian guides. There is preserved in the records of the Stevens party a sincere warning voiced by Sluskin, the Indian guide to the expedition, who refused to go beyond Paradise Valley. Said he to his white friends:

"Listen to me, my good friends. I must talk to you. Your plan to climb Takhoma (one of the Indian names for Mount Rainier) is all foolishness. No one can do it and live. A mighty chief dwells upon the summit in a lake of fire. He brooks no intruders. Many years ago my grandfather, the greatest and bravest chief of all the Yakima, climbed nearly to the summit. There he caught sight of the fiery lake and the infernal demon coming to destroy him and he fled down the mountain, glad to escape with his life. Where he failed, no other Indian ever dared make the attempt. At first the way is easy, the task seems light. The broad snow fields, over which I have often hunted the

mountain goat, offer an inviting path. But above them you will have to climb over steep rocks overhanging deep gorges, where a misstep would hurl you far down, down to certain death. You must creep over steep snow banks and cross deep crevasses where a mountain goat could hardly keep his footing. You must climb along steep cliffs where rocks are continually falling to crush you or knock you off into the bottomless depths. And if you should escape these perils and reach the great snowy dome, there a bitterly cold and furious tempest will sweep you off into space like a withered leaf. But if by some miracle you should survive all these perils, the mighty demon of Takhoma will surely kill you and throw you into the fiery lake."

The impassioned warning of Sluskin of the Yakima is expressive of the Indian's reverence for the wonders that are now the national parks. The Indian lived daily in the shadow, not only of the mountains, the cliffs, and the waterfalls, but of death. He lived as a wild thing lived, by the caprices of Nature. Life was to him fickle, hazardous, difficult. Little wonder that he resisted, albeit futilely, the invasions of the white pioneers into his hunting grounds. Natural it was that he fled for a last refuge to the lands of his gods. No picture of the national parks is complete without the story of the Indians that lived in them. Elsewhere, the white men have changed the Indian and his manner of life. In these few spots, where the devastation of civilization is held in check, it is fitting that the red man, too, should be found, still living as a child in the arms of Nature.

NATURE'S NOTES

"OH, Ranger, Ranger!"

The ranger paused in his talk to a group of Sagebrushers gathered at the upper end of Yosemite Valley.

"May I ask a question?"

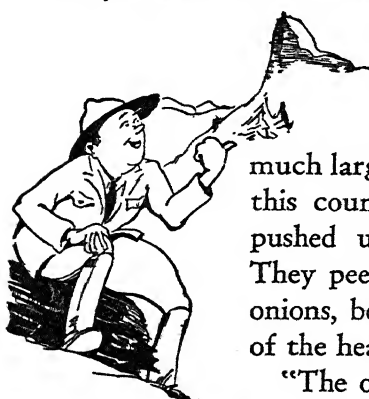
"Yes, ma'am," said the ranger, with a twinkle. "Ask me a hard one."

"Where is the other half of Half Dome?"

Everybody laughed but the ranger.

"Well, it's a long story," began the Old-Timer. "But I can tell you. It all happened a long time ago and it is just theory, but so far as I can learn it is as near the truth as anybody has been able to come. Nature leaves her notes to account for everything that has happened in the wilderness, but sometimes it is hard to read them.

"Do you see that other dome up there, the round one,



opposite Half Dome? It is known as North Dome, the perfect dome. Half Dome once looked like that, only much larger. The domes are peculiar to this country. They are solid granite, pushed up through the softer rock. They peel off in layers, like enormous onions, because of the alternate action of the heat and cold on the rock.

"The other half of Half Dome was scraped away by the glaciers. What happened was this. When the glaciers came in contact with the walls of Yo-

semite, the rock contracted under the extreme cold. That cracked enormous pieces loose and they were slowly borne away by the glaciers. Half of Half Dome was shaved off the mountain, cracked up, and pushed away by the ice. It is scattered in boulders down the Merced River Canyon."

The ranger paused for the next "hard one." It was not long in coming.

"How high is Half Dome?" asked a Sagebrusher.

"It towers about a mile above where we are sitting," he said.

"Do you mean to say that a glacier could carry away half of a mountain a mile high?"

"That is the idea, sir. As a matter of fact, it probably took two glaciers to do the work. During the Ice Age, one mass of ice pushed down Tenaya Canyon and became wedged between Half Dome and North Dome. It finally burst through and met head-on with the other glacier slowly moving down the Merced River Canyon. The two of them churned around with billions of tons of weight behind them and finally plucked and scraped at the cliffs until they carved the present walls of Yosemite Valley.

"You can find a record of what happened on those walls up there. If you look closely, you will see spots where the cliffs have been polished as smooth as the corner stone of a First National Bank. Granite does not crack so smooth naturally. The glaciers, scraping away at the sides of the mountain, polished the rock. That is one means used by Nature to leave her notes for men to puzzle out a million years later. Near Tenaya Lake and again near Merced Lake are perfect examples of glacier polish on the cliffs.

"Here in Yosemite Valley, the big job of the glaciers

was to shape Yosemite Valley. Streams had already carved a deep gorge, but the glaciers made it wider. When they melted, the gorge became a lake. The streams next dumped sediment into the lake and it became a valley. You can see the same process happening over again, on a much smaller scale, at Mirror Lake. There the streams are now filling up the lake with fine silt. Glacier Point, thirty-two hundred feet above the valley, was left suspended by the glaciers when they melted. One of Nature's little quips was to leave a great rock suspended over the cliff, almost half of it projecting over the rim. That is known as Overhanging Rock."

All of the national parks abound in strange phenomena of Nature. These marvels were the motive for setting aside the area as a national park. Dudes and Sagebrushers are not satisfied to come and look at beautiful scenery without knowing why it is there, what happened to make it, and if it will always look that way. Some of the answers to their questions are the solutions to the riddles of the universe.

The story of the national parks, from a natural history point of view, is an interesting one. In the early days many fakes were perpetrated upon the unsuspecting visitor by guides ill-trained to talk of the wonders of Nature. Often the true answer to a question was not known. So the guide told the Dude that half of Half Dome was shaken down in a great earthquake. To give visitors the true answers to their questions, as well as they can be read from Nature's notes, a staff of ranger naturalists is found in each of the parks. The ranger naturalist's business is to study the mountains, the glaciers, the forests, the animals, the streams, and the other offspring of the wilderness.

The nature-guide idea was first undertaken a great many years ago. Dr. H. S. Conard, of Grinnell College, Iowa, former head ranger naturalist of Yellowstone, is the third generation of nature teachers who have taken students and friends afield to study the secrets of the hills and forests. The first excursions into the national parks were conducted by men of scientific training, often college professors and teachers. Later, when travel increased, it was difficult to find enough men adequately trained to talk of the parks' wonders authoritatively. Enos A. Mills, of Rocky Mountain Park, and Dr. Harold C. Bryant, of the University of California, who later became assistant director of the National Park service in charge of the Ranger Naturalist forces, and who is Superintendent of the Grand Canyon, were pioneers in the movement to train ranger naturalists.

The regular rangers, though not scientifically trained as a rule, have made themselves reliable practical naturalists to cope with the barrage of inquiries which they are sure to meet each summer. Long experience has taught them never to laugh at any question, albeit foolish. "When do the geysers freeze over?" The Yellowstone ranger hears that one often, and in the old days he used to reply, "Oh, we freeze them over when we need them for skating rinks." But anyone who stops to think, knows that the geysers do not freeze over. So the ranger answers all questions seriously. There is something of the ex-



plorer in every person. When he has discovered a petrified tree, he wants to know how wood came to turn to stone, how long ago it happened. It makes the visit to the petrified tree doubly interesting to learn that the wood did not turn to stone but that the grain of the tree, decaying, was replaced by silica from the water, that it happened twenty-five thousand years ago, and that no eruption has taken place in that great span of years to destroy the relic of the last of the earth's upheavals.

In most of the parks, the ranger naturalists have prepared exhibits illustrating the phenomena of the major natural wonders. For example, the whole history of the Yosemite region, from its formation by the ancient upheavals of the earth through the eons of the glacial carvings to its present status, including the living conditions of the Indians, the coming of the whites, and the early stagecoach days, is pictured by means of exhibits in the fine, new fireproof museum, the gift of the Laura Spelman Rockefeller Memorial Foundation.

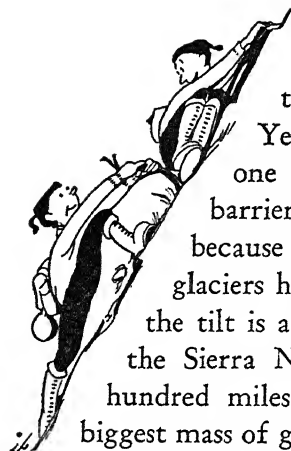
Returning, for the moment, to the ranger naturalist and his party at the upper end of Yosemite Valley, one of the party is saying, "I wish I could see a glacier at work!"

"You can do that, ma'am, if you can stay over a few days. Take the trip up to Tuolumne Meadows and join a horseback party up to Lyell Glacier. That is one of our best small living glaciers. It is hardly big enough to tackle a job like carving Yosemite Valley, but it is grinding away at the side of Mount Lyell, the highest peak in the park. You can see the glacier dragging down boulders from the side of the mountain and breaking them up or dumping them into upper Lyell Fork, where the Tuolumne River starts. Lyell Glacier only moves a few feet each summer. If you

selected a boulder at the top of the glacier to watch, it would probably take a hundred years or so to get it down to the bottom of the glacier. Glaciers are slow, but they are sure.

"Of course, if you want to see some fast-working glaciers, you might stop off in Mount Rainier National Park. The mountain is farther north and is steeper, also the climate is more severe and much more snow falls in winter. Glaciers move faster because there is more ice behind them to make pressure. Some of those glaciers move along fifty or sixty feet a year. Most of the movement is in the summer time when the ice is cracking and grinding more rapidly. The Mount Rainier glaciers are faster workers than the Yosemite glaciers. They carry so much rock and earth that the ice is dark, almost black, in color. However, an industrious glacier has its disadvantages. The Mount Rainier glaciers scoop up many rocks from the mountain side and grind them together as they slide down the slope, making a fine cement-like powder, which when deposited in the streams, gives them a gray, milky color. This is called glacier milk. Sometimes it is called rock flour. It is interesting, but bad for the fishing. Mount Rainier contains some of the greatest glaciers in the world.

"There are two kinds of mountains, ma'am, those that are pushed up, and those that are piled up. This mountain range on which we are standing, the Sierra Nevada, was pushed up. It is tilted, the eastern edge of the uplift being from twelve to fourteen thousand feet above the sea and from five to eight thousand feet above the territory immediately surrounding it. The western edge is buried beneath the silt of the San Joaquin Valley. Its slope on the western side is so gradual that if a highway could be built



from the San Joaquin to the summit of Mount Lyell in a direct line, the grade would be but two per cent. Yet the Sierra Nevada is considered one of the most formidable mountain barriers on the face of the earth. It is that because of the canyons which streams and glaciers have cut in it. On the eastern slope, the tilt is almost perpendicular. It is said that the Sierra Nevada is a single mountain four hundred miles long and eighty miles wide, the biggest mass of granite in the world. John Muir tells of an earthquake in 1872 which raised the Sierra Nevada thirty-two feet. This was a tremendous upheaval, but you can imagine how puny it must have been compared to the original movements which pushed the whole mountain, eighty miles wide and four hundred miles long, out of the earth.

"Mount Rainier, on the other hand, is an example of a mountain that was piled up. They say that the whole state of Washington, which Mount Rainier dominates, was a level plain or else it was under the sea. It's hard to tell what was under a mountain originally. A volcano starts blowing lava and rocks and ashes. It keeps piling up and piling up and piling up some more, perhaps for a million years. Finally, Mount Rainier was built up by lava outpourings to a height of almost three miles. Then the volcano quit working. Layer after layer of snow fell on the mountain as it cooled off. It packed into the crater and became ice. The ice expanded and contracted, as the weather changed, cracking off part of the crater. The ice flowed down the mountain side. Yes, ice can flow. It isn't as solid as it

looks, and it will flow when there is enough pressure behind it.

"Ever since they started flowing down the sides of Mount Rainier, the glaciers have been grinding down that great mountain. They have probably taken two thousand feet off the top of Mount Rainier in the last million years. In another ten million years there probably won't be much to look at on Mount Rainier. That's one problem that worries the rangers. But the only thing that can save the situation is another volcano and the only national park in which we have a steadily working volcano, Mauna Loa, is in the Hawaiian Islands. We have a live volcano in Lassen Volcanic National Park, but it is lazy and works but spasmodically.

"While we are on the subject of mountains, I want to call your attention to Crater Lake. Where the lake now stands there was once a great mountain which a volcano was piling higher and higher. Finally it collapsed inside itself. Mount Mazama, it is called, posthumously. Nobody ever saw it, of course, because this all happened a million years ago, more or less. It must have been a whopping big mountain, at least 14,000 feet high, for when the whole peak caved in it left a hole seven miles in diameter and many thousand feet deep. The deep blue color of Crater Lake has never been explained. A curious feature of this beautiful lake is that, though there is no outlet for the water, it is fresh. That is probably because no streams flow into it, the lake being located on a mountain top. Its waters come from rainfall and melting snows that fall into the lake. There is just about enough of this water to counteract the sun's evaporation."

The mountains seem to be connected in some way with

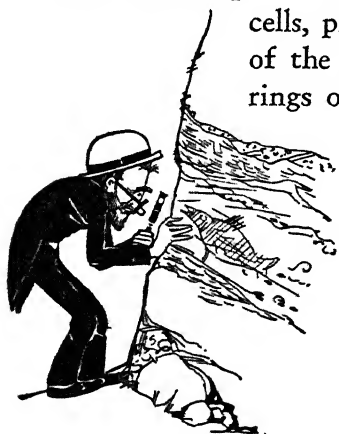
everything. Either they supply the water, or the wood, or the coal, or the mineral, or the scenery, or the plants, or the animals. Build a mountain and then tear it down! That seems to be Nature's whimsical way of working. The Rocky Mountains were once the bottom of a shallow sea. The rangers can take the visitor out in the Yellowstone and show him fossil sea fish and shells. On top of the sea shells he will find a sandstone deposit, the remains of deposits of an ancient lake. On top of that he may find a petrified forest. The forest may be covered with volcanic mud or ash. Then more sandstone; then gravel, the deposit of a river. In one part of the park they know of twelve forests, buried one on top of the other, volcanic mud deposits between them. Eons passed while these forests were growing, each above the tallest tops of its predecessors.

In Yellowstone are found several of these petrified forest areas. Lava and ashes destroyed the trees, mud covered them up and provided silica, which replaced the wood

cells, preserving for all time the grain of the wood. The preservation of the rings of these ancient trees is of the

greatest importance in piecing together the story of the earth. For a long time scientists thought that a large, fat ring indicated a moist, warm year, and that a thin ring indicated a year of drought. It is definitely established that these rings do contain the se-

crets of climatic records in prehistoric years. In the great redwoods of Sequoia and Yosemite parks, some of which



have fallen in recent years, naturalists have traced by means of rings the weather records for the past three or four thousand years. Now if they can connect the record of the rings of the sequoias in their ancient youth with that of the petrified big trees in other parks and monuments, it may be possible to trace the weather report back to the time of the Garden of Eden!

Nature leaves her notes in unexpected places!

From the study of the record kept in recent years of the rate of deposit of limestone on the cone of Old Faithful, it has been discovered that it took the geyser at least forty thousand years to build up its cone. Some of the other geysers took much longer. Castle Geyser is estimated to be 250,000 years old. Liberty Cap, that queer cone near Mammoth Hot Springs, took ages to build. No one knows how long it has been extinct, yet for centuries nothing has toppled it over. For all the heat and the weird activity below the earth, the surface has been at rest for many, many years.

Yet it is recorded in the diaries of early hunters and trappers of the Rockies that a volcano was seen to spout brimstone and fire in the Yellowstone area as late as 1811. Unfortunately these early woodsmen kept poor records and scientists cannot now identify the peak the pioneers saw erupting. Equally unfortunate is the fact that many of these early mountaineers, finding their stories were considered great lies, made a sporting proposition of it and told whoppers. Jim Bridger told gravely of how his horse walked across a canyon from rim to rim, in mid-air, without descending a foot. He explained this feat by allowing that the force of gravity had become petrified temporarily! Finding that his hearers were as yet unpetrified, he told

of finding "a petrified forest in which there were petrified birds singing petrified music!"

In Yellowstone National Park, because of the variety of the wonders, it has required a widely scattered force of ranger naturalists to answer the questions of the Dudes and the Sagebrushers. Yellowstone Museum, at Mammoth Hot Springs, is the headquarters of the nature-guide service. In it are found mounted examples of some of our bird and animal life, displays of beaver carvings, exhibits of Indian implements, relics of



pioneer settlements and explorations and a fine display of color paintings of Yellowstone wild life, the excellent work of Naturalist E. J. Sawyer. Other museums are at Old Faithful, Norris Geyser Basin and near Fishing Bridge, all telling different stories of Yellowstone's wonderful natural history. Gather around the campfire any summer night and listen to the questions that are asked the ranger naturalists. They run the gamut of the creation and the development of the world, and the resourcefulness and fund of information the ranger naturalists show in answering some of the hard ones are amazing.

"Ranger, where is the mountain of glass?" someone will ask.

"You probably refer to the Obsidian Cliff on the road between Mammoth and Norris Geyser Basin," explains the ranger. "It really is a mountain of black glass thrown up

from the interior of the earth by ancient volcanic action. This lava cooled so quickly that it did not crystallize. This hard substance, obsidian, was much prized by the Indians for making arrowheads. Jim Bridger used to tell one of his famous whoppers about the Obsidian Cliff. He claimed that when he passed through the valley on which Obsidian Cliff borders, he saw ahead of him a big bull elk. He took careful aim and shot at the animal, which kept on grazing. Bridger crept closer and fired again. Nothing happened. Three, four, five times he aimed very carefully at the elk and shot, each time creeping closer. He then suddenly found himself face to face with Obsidian Cliff. He had been shooting at the elk, he said, right through the mountain of glass and of course his bullets glanced off the mountain and missed the elk!"

Another curious formation that amazes many people is that of the pentagonal columns which hold up the cliffs on both sides of the Yellowstone River near Tower Falls. These columns are lava that cooled and cracked into remarkably symmetrical geometric figures. There are miles of them and were it not for the many other wonders of the park they would be an outstanding wonder in themselves.

"Ranger, how was this Yellowstone region formed?"

"Geologists tell us that Yellowstone was once a part of a great shallow sea. There are evidences of fossil shells and sea animals found in parts of the park. The theory is that ages ago there occurred a mighty upheaval of mountain masses, forming the Rockies. This was followed by a long period of volcanic activity. The Yellowstone region included several volcanoes, which, with their lava outpourings, formed the great plateau of the park. Blankets of

lava spread out over the sea, cooled, were covered with forests. Later, becoming active again, the volcanoes again belched forth, repeating the building-up process.

"The great volcanoes spent their energy, finally, and became quiet, but in many places their furnaces have not yet cooled. They are dying out slowly, but it may take thousands of years for them to cool entirely.

"Why do geysers erupt? Well, you have watched a coffee percolator in action. The geyser works much the same way. The water of geysers and hot springs comes



originally from rain and melting snow. Flowing down and coming in contact with lava flows which have but partially cooled, it is heated. The geyser's tube is so long and so narrow that as the water is heated at the bottom it cannot rise to the surface in natural hot springs. Hence it collects at the bottom, the very hot water held

down by the pressure of other water on top. Steam is formed below while there is still some water at the upper end of the tube. The steam finally forces its way upward through the water in the tube, emptying the tube through a volcanic eruption. After the steam and hot water are out, the geyser is quiet until enough water and steam gather to repeat the process. In the museum a miniature geyser has been built to illustrate this action."

Most Dudes want to know how far down it is to the fire that heats the water for the geysers. Geologists think that the heat is at least a mile below the surface of the

earth. In some spots the hot rocks may be even nearer to the surface, so near in fact that vegetation is baked. On the other hand, these hot rocks near the surface may be heated by steam from farther down.

"Where is the grasshopper glacier, Ranger?"

Many people have heard of these curiosities, of which there are several in the Yellowstone region. The best-known "grasshopper glaciers" are in the Beartooth National Forest just outside the northeast corner of Yellowstone. There are countless millions of grasshoppers, imbedded in the ice. They have been there for centuries, frozen solid. When the sun melts the ice, the grasshoppers disintegrate and the pools at the base of the walls of ice are dark brown in color from the grasshopper "tobacco juice." How they came to be in these glaciers in such quantities is but surmised. The supposed explanation is that year after year great clouds of grasshoppers, passing like a scourge of locusts over these mountains, were caught in snowstorms which forced them down. As the snow froze to ice, the grasshoppers were imbedded in it.

Another mystery that the rangers must clear up often for visitors is that of the "red snow" of the park glaciers. This "red snow" is really not snow at all, but a sort of lichen, scarlet in color, which lives in snow. It is found in several of the parks on glaciers and old snow fields.

Curiosities which rank with the grasshopper glaciers are the nests of ladybug colonies found on the highest peaks of the Sierra Nevada. Climb Mount Lyell in Yosemite National Park at the end of summer, and at the topmost peaks, beneath the rocks, far out of reach of food, you will find millions and millions of ladybugs. Often they are so thick in these mountainous hives that they can be

scooped up by the handful. Enterprising "bug men" used to make a business of going to high Sierra peaks to gather ladybugs by the gallon. They were sold by the pint or quart at fancy prices to farmers and orchardists who prize the little bugs for their voracious appetites for certain pests which eat plants and the leaves of trees. But what instinct leads them to fly hundreds of miles to the highest mountains on the continent to pass their winters in zero weather, far from food, is still a mystery.



"Ranger, where is timberline?" is an oft-asked question. Timberline is something that changes with the latitude. In the Arctic circle, timberline is not far above sea level. At the Equator it is said to be about three miles high. It varies in a very definite ratio between altitude and latitude. One mile straight up in the air is the equivalent of eight hundred miles north or south from the Equator, in establishing timberline. Of course, exception must be made to the rule to allow for warm or cold currents of the ocean, or other conditions which may change the temperature materially in certain parts of the earth. The angle of a mountain slope is a factor. Timberline is higher on a southern slope which receives the sun's rays than it is on a northern slope which is in the shade.

This can best be illustrated by an unusual condition in Yosemite Valley, where the steep southern wall is constantly in the shade and the north wall is in the sun all winter long. Consequently, the south side of the Valley

is the home of flowers and trees which ordinarily grow a hundred miles or more to the north. The north wall is the home of flowers and trees found far to the south of Yosemite's latitude. The equatorial side of the valley is the colder. This unique set-up has given Yosemite Valley a remarkably rich flora and made it the happy hunting ground of the naturalist. To the cold shade of the south wall trees have migrated from the north and from higher altitudes. In the warm sunlight of the north side of the valley, where there is reflected warmth from the cliffs of that side, are found plants which are known to have thrived in regions as far south as Mexico.

In Yellowstone, timberline is five hundred feet higher on the south slope of Mount Washburn than it is on the north slope. In that park timberline ranges from ninety-five hundred to ten thousand feet. The top of Mount Washburn is in the Arctic-Alpine zone, well above timberline. It is here that one finds the gorgeous gardens of flowers growing against snow banks. These little plants thrive for a brief span in the intense sunlight unfiltered by the heavy atmosphere of the lower levels. The sun's rays bring them out in gorgeous carpets, which blanket the higher slopes of Yellowstone, Rocky Mountain, Glacier, and Mount Rainier National parks.



Life zones are groups of plants and animals living together in agreeable climates. Measured in terms of life

zones, a trip from the San Joaquin Valley in California through Sequoia National Park to the summit of Mount Whitney is the equivalent of a journey from Mexico to the Arctic Circle at sea level. As many different kinds of plants and animals would be found on this short trip as on vastly longer trips from south to north.

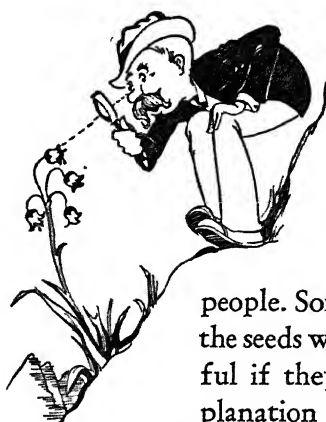
Most of the national parks, because of their variety of altitude, include several life zones. There are five zones in Yellowstone, for example, reaching from the Alpine zone at the top of Mount Washburn and Electric Peak, through the Sub-Alpine Zone, the Hudsonian, the Canadian, and the Transition to the Upper Sonoran zone. These five zones account for the wide range of trees, flowers, birds, and animals in the Yellowstone. Almost equally great is the variety of life zones in many of the other parks, each of which offers a special field of study for the ranger natu-

ralist and his staff before they can answer the questions sure to be put to them by visitors.

"Well, Ranger, how did arctic plants get to Yellowstone from the Arctic circle?"

"That is a question which seems to worry a good many people. Sometimes they ask if the birds bring the seeds when they migrate. It is very doubtful if they do. The generally accepted explanation is that North America once had

a much colder climate than it now enjoys. When the great glaciers spread over the continent, during the Ice Age, the plants that originally grew as far north as the Arctic circle were no longer able to thrive there. They



were survived only by descendants which lived farther south. When the ice blanket melted and the climate became warmer, the cold-loving plants growing in the south died out or slowly crept north, following the glaciers back to the Arctic circle. Some of these plants, instead of migrating northward, worked up the slopes and, having established themselves comfortably on the mountain tops and finding the climate congenial, stayed there when their comrades followed the ice back to the Arctic circle. Other and more tropical plants came in and surrounded these little belts of arctic plants, isolating them on the mountain tops.

"These migrations of the flowers and trees form the most fascinating study in the world, once you get into it. A good place to see the flowers migrating is on Mount Rainier, where the glaciers are still retreating, a few feet each year. Each inch they give up is eagerly swallowed up by the army of the flowers, marching up the mountain side. It is said that sometime the flowers will swallow up all the mountain side that now belongs to the great ice sheets. Some day, unless there is another ice age, the flowers will capture the mountain."

Of course, present-day Dudes and Sagebrushers will not see the mountain humbled. These migrations of the flowers have taken thousands upon thousands of years. In the course of the migrations many species of flowers have been lost entirely. For that matter many new ones have been formed, too, by the flowers and trees adapting themselves to new conditions and climates.

Almost equally interesting is the distribution of animals through the life zones. The migrations of the animals are easier to understand. They are not attached to the earth.

They can move about and find new homes quite easily. Yet they were distributed through their zones in much the same manner, each animal following the climate that suited him best. So it is that we find the mountain sheep and the little cony, or rock rabbit, in the Hudsonian and sub-Alpine zones of all the national parks, isolated from their kind by many miles of warmer climate which they shun and avoid. There are still species of finches and ptarmigan which prefer to raise their young in the rigorous and cold Arctic-Alpine summits of Rocky Mountain and Glacier National parks, close to the glaciers.

"Ranger, why are the colors of these mountain-top flowers so deep and brilliant?"

"Well," answers the ranger, "scientists have never figured that out exactly and we don't know for sure, but it has been suggested that the reason lies in scarcity of insects on the mountain tops. Insects pollinize the flowers and it would seem natural that they would be attracted to the more brilliantly colored ones, hence these species are pollinized and reproduced, while the poor pale and colorless plants in time disappear or at least are not so numerous as to be conspicuous."

Many are the marvels of life at the snowline! For instance, in many parks little willow trees grow that are only two inches tall. They grow up in the Arctic region, too, and are the winter food of the reindeer. "Red asparagus," or snow plant, is another weird example of life. It is a parasite plant. True flowering plants take their food or manufacture it from the air and water. They have green stems and leaves, green being chlorophyll, an essential to their lives. In the case of the snow plant, it manufactures its food from dead or decayed vegetable matter, hence

it does not resemble other plants. It is scarlet in color and to all but close observers its general appearance is that of an unusually large stalk of asparagus, hence the name sometimes used, "red asparagus." As a general rule, flowering Alpine plants, grasses, and lichens will grow for a thousand feet above the line of the last stunted and gnarled growths of timber. By the trees and flowers he finds about him, the ranger naturalist who knows the life zones of his park can estimate the altitude of any given locality.



In the Sierra Nevada, the Old-Timers can tell the altitude very readily by the combinations of trees, the sugar pine refusing to grow below the six-thousand-foot level, the digger pine refusing to advance above the four-thousand-foot level, the juniper, the Jeffry pine, and the tamarack each choosing its own small sphere on the generous mountain sides.

There is no more fascinating pastime for the Dude or the Sagebrusher from the city than to join the nature-guide parties in any of the national parks, and see how Mother Nature's plans are working out before his own eyes, on the mountain side, where each foot of soil is disputed by a silent and persistent army of plants or trees. A week in the parks with a ranger naturalist with whom to talk things over makes a year with books about these same subjects more fascinating than it could ever be otherwise.

"THE LONG, LONG TRAIL A-WINDING—"

Hello, hiker, how does it go?
How far to camp—a mile or so?

Just a little way farther,
Just around the next corner,
Just this big hump and another,
Just a mile or two more.

How far is a mile, I'd like to know,
When you're hitting the trail on a tramp?
Oh, a mile is as far as you've yet to go
Till you've hoofed it on into camp.

—*Rhymes of the Rangers*

"RANGER, what's the best time to hit the trail?"

The Old-Timer reflected, recalling many seasons in the mountains.

"Well, it all depends," he surmised, finally. "June's when the trails thaw in these parts. June's when the mountain flowers poke their heads through the snow. Some would say June's the time to hit the trail. But then there's July when the trails are drier and the woods are in full leaf and the snow's all melted except on the north slopes of the peaks. On the other hand, by August the bugs are gone and camping is more comfortable. For myself, I like to hit the trail about September, when the season's over, and there's a touch of autumn in the air. You can take your choice."

"What kind of a mountaineer are you?" he asked, as if

by afterthought.

"Oh, fair to middling, but nothing wonderful."

"Not what I meant," insisted the Old-Timer. "How do you classify yourself? Club mountaineer, free-lance mountain climber, nature lover, trail rider, or just a plain ordinary hiker?"

"It makes a difference in what you're trying to do in the mountains," explained the ranger, "and that has something to do with when you'd best hit the trail. F'r instance . . ."



He went on to explain that club mountaineers come in organized groups, pitch their tents near some mountain on which they have designs, and camp for a long enough time to give everyone in the party a chance to climb the highest peaks in the region. The organized climbs must be made when climbing is best, for

safety's sake, generally in the middle of the summer, which is about the only time a large party can reach the tips of the highest mountains.

Free-lance mountain climbers are hardy souls who make it a hobby to climb every high mountain they can reach, often under the most difficult circumstances, sometimes in the dead of winter. They seldom bother with camps. They operate singly or in twos and threes. Since they are experienced mountaineers and know enough to come well equipped, the free-lances are as a rule well able to take care of themselves. They hit the trail any time of year and think nothing of blazing new routes up the peaks,

even in the dead of winter.

Nature lovers don't care much what is up on top of the mountain. The trail lures them not because it leads to the earth's high spots but because it winds through woods and meadows and dells and across carpets of flowers. The nature lovers are looking for butterflies and animals and wild things that blossom of their own free will. They meander over the trails at leisure, fluttering about some ranger naturalist like so many disciples about an apostle. The flower lovers are on the trails as long as Dame Nature holds open house in the great out-of-doors.

Trail riders are a breed to themselves. The old hands at the sport love the smell of the saddle, and the tenderfoot is thrilled by the adventure of it all. One would think that



a narrow ledge, flanked by a high granite wall on the one side and a hundred-foot drop on the other, would be the last place in the world to learn to ride. But the trail ponies know their stuff, and if the trail rider but gives his mount the rein he will follow the guide's horse to the end of the trail. Trail-riding is great sport, and the time of year makes not much difference—in fact, they trail-

ride the snowdrifts in some of the parks.

The plain and lowly hiker, with his camera in his hand and perspiration on his brow, outnumbers all the aforementioned gentry of the trails. The hikers are the ordinary

folks, weary of the sight of old brick walls, longing for a look at the wilderness, hoofing it along the winding path for no other reason than that they enjoy it. All the hiker asks is a well-marked trail, leading somewhere at the end of the day. All the luggage he wants is an extra pair of socks, a big bite of lunch, and a camera with which to shoot the stag that stares pop-eyed from the azaleas. The national park trails are the complete answer to the urge to hike, for on them the hiker can leave cares behind and be sure of a meal and a bed at the end of the day for almost as little as it costs to stay at home.

Every so often someone bewails what the automobile is doing to the American's ability to walk. Nevertheless, it is enabling millions of people to reach the thousands of miles of trails in the national parks or the national forests. Some lingering spark from the days when our ancestors were trail-blazing flares up in each of us once or twice or thrice a year, and there burns the longing for the winding trail that leads now over mountain passes, now through fragrant forests, now by rushing waters or past ramparts of rock. Then, though a million at a time take to the trail, so great is the wilderness, the multitude can be swallowed without disturbing its serenity.

The legions of stay-at-homes who know the trail but vicariously, some because of apprehensions of the rigors of the wilderness, some because it is too much work, others because of queer notions of the dangers involved, have some weird ideas about the trails. To answer a few of the questions that are asked of the rangers:

Nope, you don't meet wild Indians in the Western woods any more. You may see some tame ones working on the trails, but they won't molest you.

Yes, you might meet a bear. Just give him a chance and he will amble into the woods. No, you needn't fear wolves, or mountain lions.

Altitude? Yes, it affects some people. Those with weak hearts should avoid trails that lead into the higher mountains.

Yes, carry a compass, if you wish, but in the high west-



ern mountains you don't need it as much as in the eastern woods, because in the Rockies or the Sierra or the Cascades you can always see some high peak for a landmark. Yes, sir, the trails are well blazed, with a capital I carefully cut on trees, and small piles of rocks, known as ducts or cairns, and junctions are marked, but it's a fact that some hikers can't read

or won't, and some of them do get lost.

Yes, ma'am, women can do it. Thousands of them do hit the national park trails without male escorts. In fact, more women are seen on the park trails than men.

No, you don't need a guide to hike the park trails, but sometimes it adds to the fun to join a party under the leadership of a ranger naturalist, who conducts hiking expeditions without charge in the national parks.

Guns are out, Dude. No shooting, except with a camera. In fact, guns are forbidden, in the parks.

Shoes? They're the most important item of your costume. When you hit the trail, the shoes do the hitting all the way. Cheap, poorly made shoes are no economy. Good

shoes, with strong soles, are essential. High ones are preferable, large enough so that you can wear two pairs of socks, silk or cotton next to the feet, wool next the shoes.

Clothes? Well, something tough and warm. Khaki knickers stand the gaff. Women as well as men wear them. A light raincoat is useful in occasional showers. A warm woolen sweater is needed for the cool mountain evenings, when the campfire warms only one side of you at a time.

Yes, bring a knapsack, one that rides comfortably on the back. It will hold the raincoat, sweater, the extra pair of socks, the flashlight, the toothbrush, and the lunch. The hands should carry nothing, unless a walking stick.

A camera? By all means. Preferably a small one that straps on the belt or hangs from the shoulder. Bring plenty of films.

A first-aid kit of the Boy Scout type is useful. You probably will never use it, but if you need it at all you need it much.

No, speed isn't the thing on the trail. The race is to the tortoise, with the slow but steady "poison oaker" stride. They seem to be just barely moving along, but they keep going while the speed-burners have to rest.

Trouble? Forget it, unless trouble troubles you. Then have someone call up the rangers on the nearest trail telephone and they will arrange a "drag out."

The "drag out" is the emergency service maintained day and night by the national park rangers for hikers in distress. Maybe night falls on a hiker who neglected to bring a flashlight. Maybe he loses his nerve on a steep down stretch of Yosemite's spectacular Ledge Trail. Maybe she has missed the trail and is lost. Maybe it's a sprained ankle,

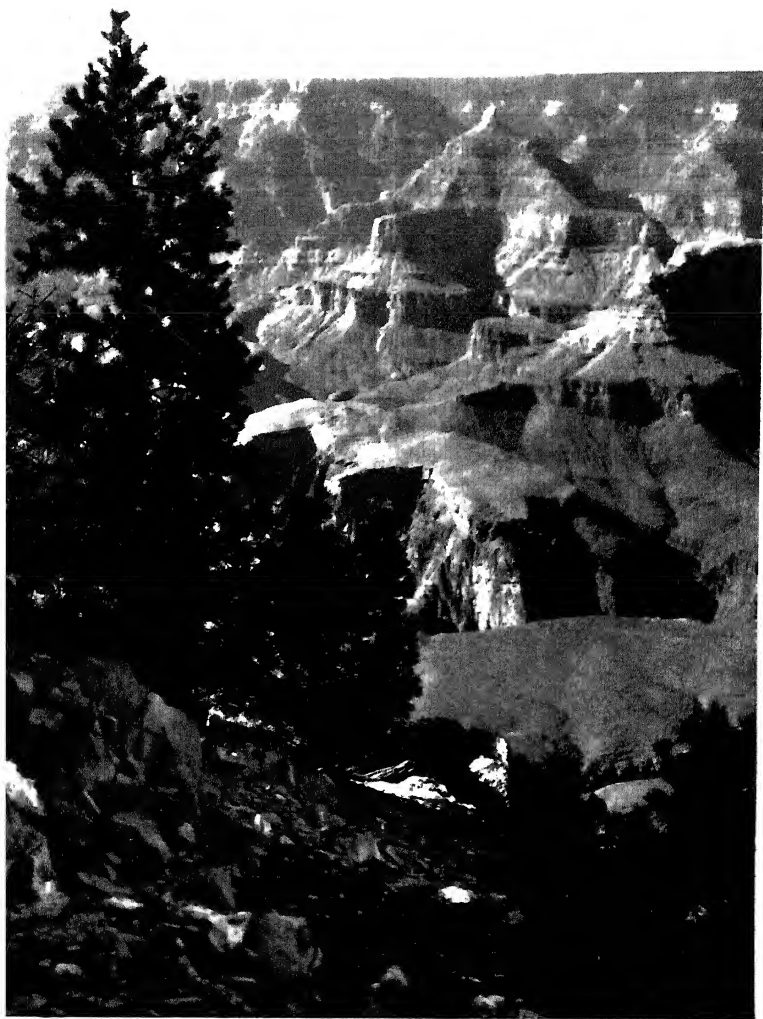
or a more serious accident. Maybe it's morning, noon, or past midnight—a ranger is always on duty at headquarters



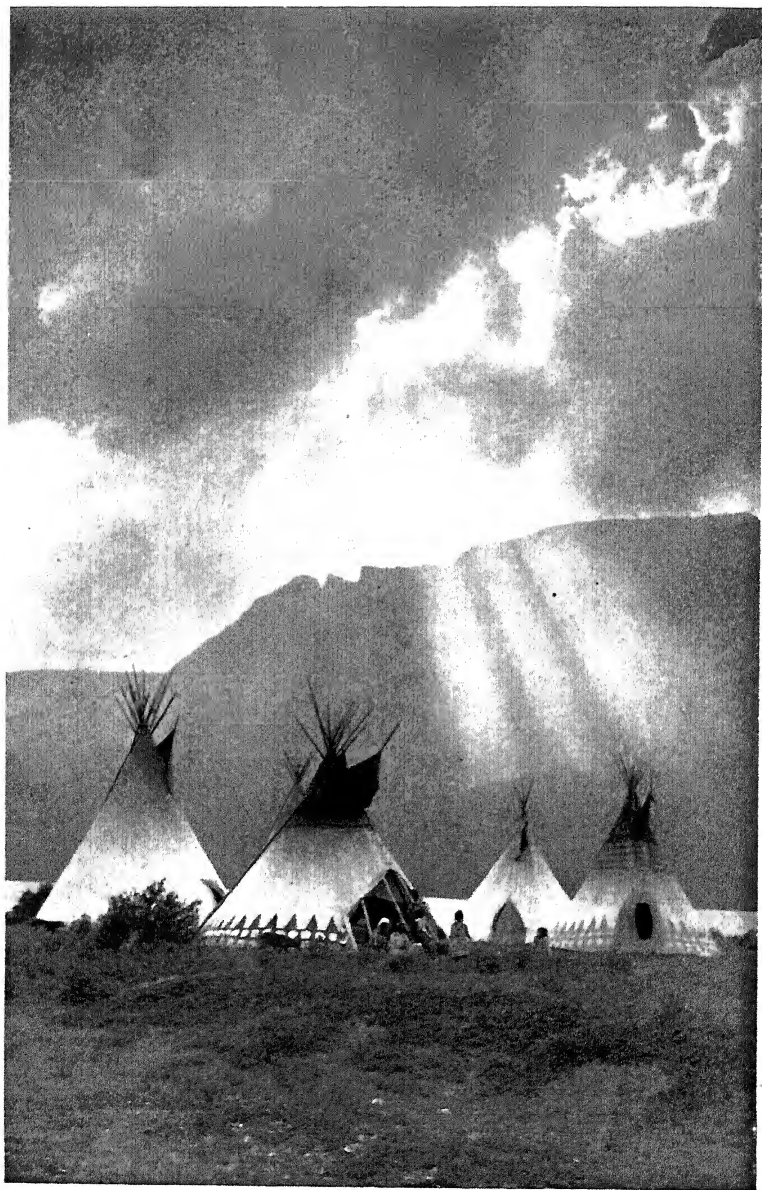
to make the "drag out" if need be. Most of them are unnecessary, but the rangers must always respond to the call for help for the sake of one in ten who actually needs it.

One summer day three ambitious youngsters from Iowa arrived in Rocky Mountain Park in an old car, and without delay or preparation set out to climb Longs Peak. They reached the peak by late afternoon, and started down by what they thought to be a short cut. The route became increasingly steep and their shoes, without hobnails, slipped on the granite. The lads threw discretion to the wind and two of them tossed their shoes ahead of them, hoping to find them below. One boy stuffed his shoes inside his shirt and his ounce of judgment undoubtedly saved the lives of all three, for it was but a short time until they were trapped on a narrow ledge, with bruised feet, unable to proceed. The boy with the shoes made his way perilously back to the peak and down the regular trail to call the rangers. It was night when he reached the ranger station. Darkness, broken by lightning storms, delayed the "drag out" until the next day, when the two barefoot boys were found on their precipitous ledge, almost frozen.

Foolhardy recklessness causes practically all of the distress on the trails. Youngsters insist on blazing their own trails, against warnings of old-timers of the mountains.



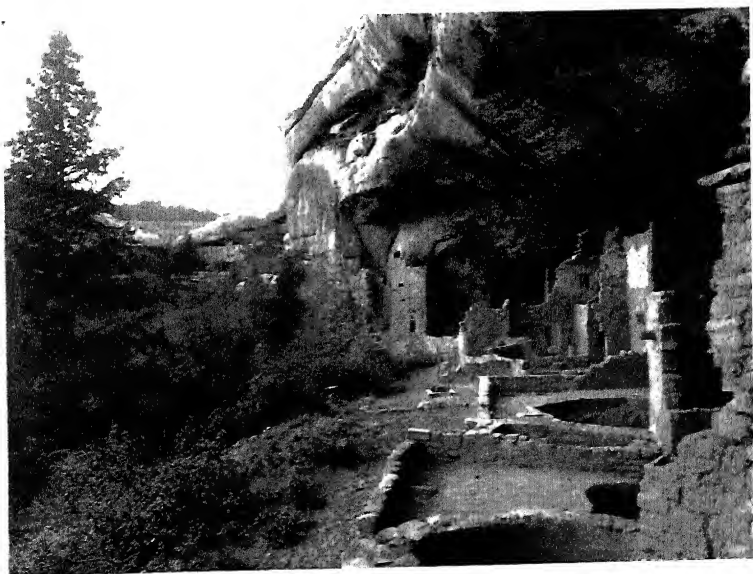
VIEW FROM YAVAPAI POINT IN GRAND CANYON NATIONAL PARK



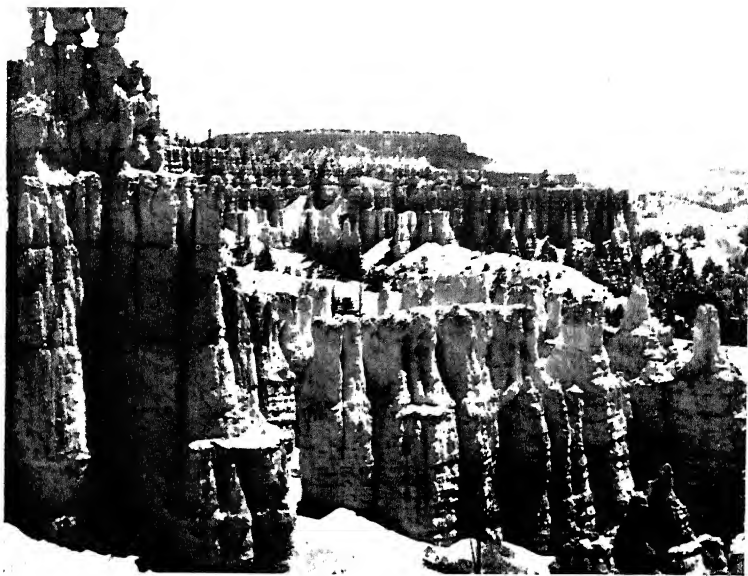
BLACKFEET INDIAN CAMP IN GLACIER NATIONAL PARK



HOPi HOUSE REPRODUCED IN GRAND CANYON NATIONAL PARK



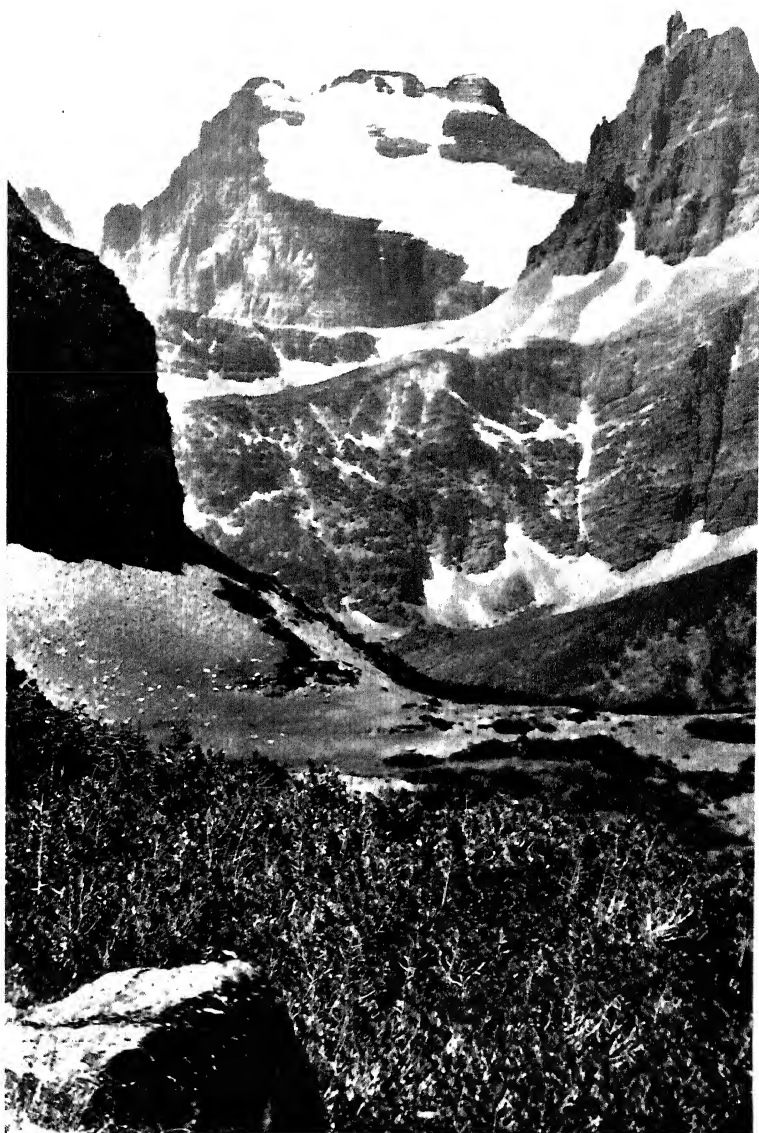
SPRUCE TREE HOUSE, ANCIENT CLIFF DWELLING, MESA VERDE NATIONAL PARK



TEMPLE OF OSIRIS, BRYCE CANYON NATIONAL PARK



LASSEN PEAK, LASSEN VOLCANIC NATIONAL PARK



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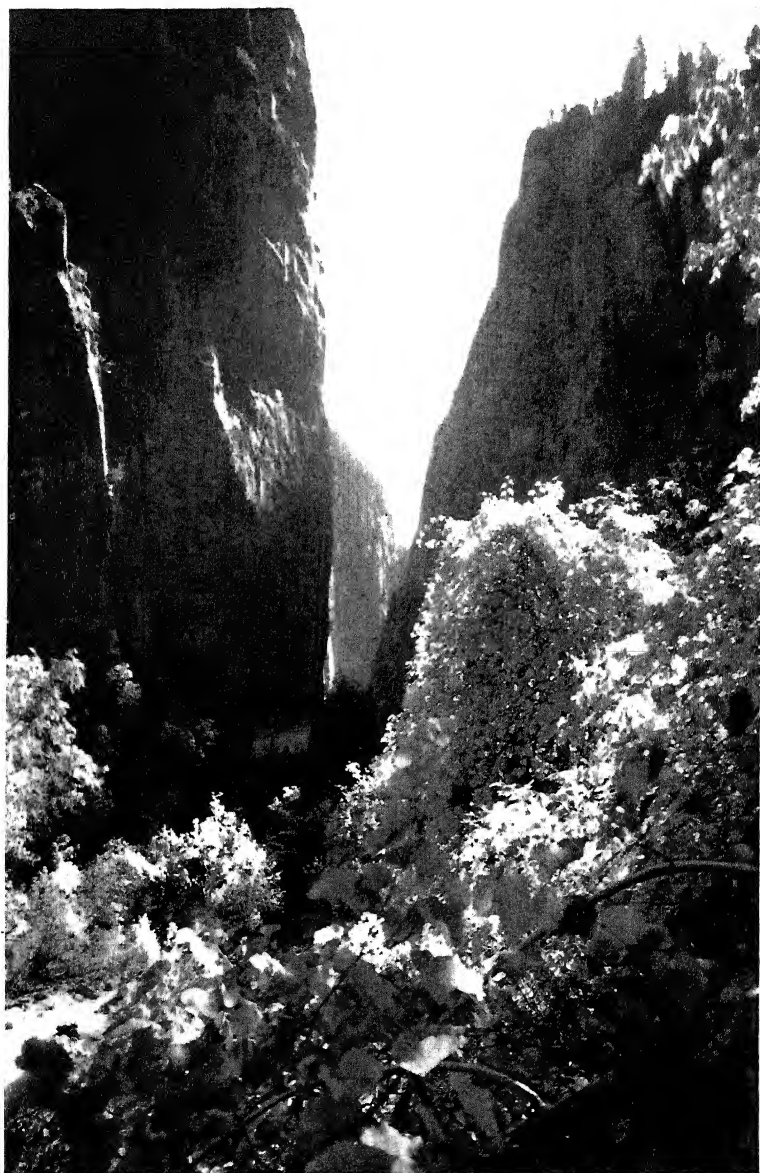
MOUNT MERRITT FROM RED GAP TRAIL, GLACIER NATIONAL PARK



CRATER LAKE AND PHANTOM SHIP IN CRATER LAKE NATIONAL PARK



GENERAL SHERMAN TREE, SEQUOIA NATIONAL PARK, OLDEST AND
LARGEST LIVING THING ON EARTH



IN ZION CANYON, ZION NATIONAL PARK

The world's record for "drag outs" is held by the rangers of Grand Canyon National Park, where the approaches to the park are at a high elevation. From the rim of the Canyon trails wind down to the river, and many people undertake the hike down into the Canyon. It is down hill all the way, and as the hiker continues to a lower elevation, respiration becomes unconsciously easier, until by the time the river has been reached he feels not the least tired and considers himself something of a hiker. Where they drop out is on the way back, up hill all the way, with altitude against them. It is exactly the reverse of the average hike. The "drag out" mules earn their keep at Grand Canyon, and the saying is that, though it's the same identical trail up or down, "it's seven miles down and seventy-seven miles back."

It should be added here that the hiker who keeps himself in trim by frequent walks about his home, who plans his trips and knows where he is going and about how long it will take, who understands his own physical condition and knows what he is equal to, almost never is humiliated by having to submit to a "drag out." The rash ones, the blundering ones, those who start out for a little walk and can never turn back as long as there is another bend in the trail, are the kind who make work for the "drag out" crew.

Of course, the confirmed hiker is not satisfied to hit the trail once or twice or three times a year when he can get away for a trip into the high mountains. He seeks out kindred spirits in his own neighborhood and together they explore the trails or country roads near by, and the first thing you know a new trail club has been born. The growth of these trail or mountaineering clubs until every

city of importance has at least one and sometimes several would indicate that, the automobile to the contrary notwithstanding, Americans are using their legs for other purposes than to step on the gas pedal.

Trail clubs are not new to this generation, of course. The forerunner of them all in America, the Appalachian Club, celebrated its golden anniversary not long ago. Most of them have adopted a mountain and mothered it, as it were, with all of its glaciers, forests, streams, and meadows. Thus it has come about that most of the more worth-while mountains of the land have been saved for posterity.

When the Appalachian Club was formed half a century ago by a handful of trail enthusiasts in Boston, it seemed as if the wilderness known as the West never could be swallowed up. Yet within a man's lifetime that almost happened. The Appalachians first turned their attention to the White Mountains, which were then an impenetrable wilderness known to but a few trappers and timber prospectors. The Appalachians mapped the White Mountains and found no connected trail system by which they could tramp for days on end, though there were many short trails leading off from resorts or stations. It was then that the idea of the "Long, Long Trail" was evolved.

Today the Appalachian Club numbers its members by more than four thousand. It has a notable clubhouse in Boston and chapters in New York and several other eastern cities. Its leaders conduct weekly walking trips in the country about these population centers and head annual expeditions into the more remote wilderness. The club operates a chain of lodges and camps along the main trails of New England, capable of accommodating several hundred members each night. It was sponsor of a trail con-

ference at which representatives of state governments and of trail clubs met and planned a great interstate continuous trail system extending from Georgia up the backbone of the eastern mountain range all the way to the northernmost tip of Maine. This system of trails is now connected, and the eastern hiker can hit the trail anywhere along the "Long, Long Trail" and keep going for weeks on end without leaving the wilderness, yet all the time be within a hundred miles of a metropolis. The Appalachian Club is particularly interested in the national parks and forests of the northeastern states, especially Acadia Park and the White Mountains forests. The Potomac Appalachian Club's activities radiate from Washington, D.C. and extend all through the Blue Ridge, especially Shenandoah National Park, while the southern Appalachians are the prime interest of the Smoky Mountains Hikers Club with headquarters at Knoxville, Tennessee.

After the Appalachians had demonstrated what trails could do for the White Mountains, a group of trail lovers in Rutland, Vermont, assembled, organized, and adopted the Green Mountains as their particular orphan. The goal of the Green Mountain Club was the building of two hundred miles of trails in their mountains. This was achieved and met with such general approval that the club grew into a widespread organization with chapters in half a dozen cities, including New York.

When it comes to doing something big, the merit badge goes to the Sierra Club of California. Casting about for some bit of wilderness to which to be big brother and big sister, this trail society, founded in 1892 under the leadership of John Muir, the noted naturalist and sage of the mountains, adopted the Sierra Nevada. Thus the Sierra

Clubbers became the god-fathers and god-mothers not only of the biggest mountain mass in the world, but also numerous living glaciers, the world's oldest and largest trees, the highest waterfalls, and the tallest peak in the United States, not to mention the country's lowest depression, Death Valley, nearly three hundred feet below sea level, right next door.

It goes without saying that looking after this vast area has kept the club busy. At least once each year the members pitch tent as near the timberline as possible, somewhere along the long John Muir Trail, skirting the skyline of the Sierra, and literally hundreds of men and women undertake personal inspections of the great Sierra peaks. The Sierrans hold that camp comfort adds to the joy of mountain climbing, so it is the practice of

this organization to scour California for the best camp cook in the world, and his presence along with all the food anyone can eat, plus plenty of blankets to keep warm, adds to the zest of mountaineering.

This annual outing of the Sierra Club is a momentous affair, and the Sierrans take no chance of being incapacitated. To keep fit for the big hike each summer, they organize

trail trips each week-end from San Francisco and Los Angeles, into the near-by mountains with which those favored cities are blessed. For all its enormous size, there probably is no mountain in the world so well explored, so thoroughly trailed, and so easily accessible as the Sierra Nevada. Six months of the year its higher regions are



locked in the arms of winter, but during the arid California summers Sierra trails are dry and safe and the atmosphere is perfect for hiking. Four great national parks, Sequoia, Yosemite, Kings Canyon, and Lassen, lie in this fastness, and half a dozen national forests.

The Mazamas live in Oregon. Their name they share with a mythical mountain said by geologists to have been at one time among the highest peaks in the United States. Too late the Mazamas organized to protect this mountain for it tumbled into its hollow inside a million or so years ago and thus became Crater Lake. Nevertheless, they are the patrons of the defunct mountain and the more practical minded of the Mazamas have turned their attention to Mount Hood, not so high but probably as beautiful. Every time some engineer proposes to build an incline railway up Mount Hood, the Mazamas set up a terrific protest, with the result that all such ideas have failed. Mount Hood is reserved for those who travel by trail, as the Mazamas do, not only on its slopes, but in the verdant forests of Oregon.

The trail devotees of Washington found themselves well supplied with noble mountains, what with Rainier, Olympus, Baker, and others. Their society is called the Mountaineers, with headquarters in Seattle and chapters in Tacoma and Everett, while on the other side of the Cascades they are assisted in mothering the mountains by the Mountain Club of Spokane, independent but devoted to the same forests and trails.

There are numerous other trail clubs, each active in its sphere. The largest of the Rocky Mountain trail clubs is the Colorado Mountain Club, with headquarters in Denver. The annual summer outings of this club are spent

high on the trails of Yellowstone, Glacier, or Rocky Mountain National Parks. The winter outings of the Colorado Mountain Club are held at Fern Lake in Rocky Mountain National Park where for several days each February its members revel in snow sports at zero temperatures.

Nor is it necessary to have near-by mountains to adopt to justify a trail club. Chicago has a Prairie Club, with many hundreds of members, devoted to the cause of saving a little of the wilderness in the Great Lakes region. The Prairie Club turns to both the Rocky Mountains and the Appalachians for annual outings on the trails. It is especially interested in the Great Smoky Mountains National Park, but the Smoky Mountains Hikers Club, one of the finest of all these outdoor climbers' organizations, claims this noble range and never a week goes by without a party of its members finding its way up a high peak or ridge in the most rugged of all the eastern mountains. The Pennsylvania Alpine Club, with chapters in several cities, musters several thousand trail enthusiasts pledged to the protection of the forests, the mountains, and the wild birds and animals of the state. And there are numerous other societies, among them the Izaak Walton League, the rolls of which include the names of 150,000 fishermen, hunters, and lovers of the out-of-doors interested in the conservation of the wilderness.

THE STORY OF THE NATIONAL PARK SERVICE

THE national park idea was born in 1870 around a camp-fire near the junction of the Firehole and the Gibbon rivers in what is now Yellowstone National Park. At that time, Yellowstone was a wilderness more popularly known as "Colter's Hell," so named from the stories told about the area by the intrepid trapper and hunter, John Colter. The remarkable features of the Yellowstone were first described by David E. Folsom and C. W. Cook of Montana, who explored part of what is now the park in 1869.

It was in 1870 that the now famous Washburn-Langford exploring party, assisted by Lieutenant Gustavus C. Doane and five cavalrymen, undertook the complete exploration of the Yellowstone. The party consisted of General H. D. Washburn, commander; Samuel T. Hauser, Cornelius Hedges, W. C. Gillette, Walter Trumbull, Truman C. Everts, Benjamin Stickney, Jacob Smith, and N. P. Langford, all residents of Helena, Montana, then a frontier settlement.

This party was tremendously impressed with the geysers, the hot springs, the boiling mud pots, the lake, the canyon, and the waterfalls, and because one of their number, Truman C. Everts, became lost, the explorers lingered long in the vicinity of Yellowstone Lake, hoping to find Everts. Giving him up as lost (he was later found by searchers after enduring almost unbelievable hardships), the party pushed on toward Virginia City, Montana, hoping to avoid the early snowfall. The birth of the national park idea has been described by Nathaniel P. Langford,

who afterward served as first superintendent of the park.

"It was the first camp we made after leaving the lower geyser basin," he wrote. "We were seated around the campfire, and one of our number suggested that a quarter-section of land opposite the great falls of the Yellowstone would be a source of profit to its owner. Another member of the party thought that the upper geyser basin would furnish greater attraction for pleasure seekers.

"Mr. Hedges then said that there ought to be no private ownership of any portion of that region, but that the whole of it ought to be set apart as a great national park. The suggestion met with a quick and favorable response from other members of the party, and, to quote from a recent letter of Mr. Hedges to me, 'The idea found favor with all, and from that time we never lost sight of it.'

"On our return, Mr. Hedges advocated the project in the public press. . . . All this was several months prior to any government exploration."

Less than two years later, on March 1, 1872, Congress created Yellowstone National Park, setting aside an area approximately 62 miles long and 54 miles wide, consisting of 3,348 square miles, or 2,142,720 acres, "for the benefit and enjoyment of the people forever." It was enlarged in 1929 and now has an area of 3,458 square miles or 2,213,206 acres.

It is true that the area which is now Hot Springs National Park had been set aside for the public benefit in 1832, but a national park was not created until 1921. Likewise, in 1864, Congress had passed an act turning over to the state of California the areas that are in Yosemite Valley and the Mariposa Grove of Big Trees, but the Yosemite National Park was not created until

1890 when another act of Congress set aside the great area of high mountain peaks, glaciers, forests, valleys, and waterfalls of the Sierra Nevada, approximately the present area of Yosemite Park. Curiously enough, by that time the federal government had lost control of Yosemite Valley and the Mariposa Grove of Big Trees, the two outstanding attractions of Yosemite Park. They had been ceded to the state and were administered by state officials. This division led to many disputes, culminating in a disagreement over which group of authorities should fight a forest fire on the wall of Yosemite Valley half way between Yosemite Valley, the state's domain, and the rim, under control of federal authorities. While the dispute continued, the fire raged, doing considerable damage, and roused public indignation. This led to the popular demand for one authority in Yosemite, and in 1906 the state ceded the valley back to the federal government.

Sequoia National Park was established by Congress in 1890 to preserve the choice groves of big trees, among them the General Sherman Tree, generally conceded to be the largest in the world. Mount Rainier National Park was formed in 1899, Crater Lake in 1902, Wind Cave in 1903, Platt and Mesa Verde in 1906, Glacier Park in 1910, Rocky Mountain in 1915, Hawaii and Lassen Volcanic parks in 1916, Mount McKinley in 1917, and Grand Canyon and Zion in 1919. Bryce Canyon became a national park in September, 1928. Grand Teton National Park was established on February 26, 1929 and Acadia formally became a park after being known under another name for ten years. In 1930 Carlsbad Caverns National Park was added to the system after six years as a national monument. Great Smoky Mountains Park was established the same year. Shenandoah

became a national park in 1935, followed the next year by Mammoth Cave. Olympic National Park was created in 1938. The three newest national parks are Isle Royale, Kings Canyon, and Big Bend, the former two set up in 1940 and the latter established in 1944. The only park in process of formation is the Everglades in Florida.

In the early days national parks were created from time to time by Congress without any particular policy governing their establishment. Previous to 1916 the Parks were administered by the Secretary of the Interior as a part of his miscellaneous activities. To maintain order, the Secretary of the Interior called upon the War Department for troops which were stationed in Yellowstone, Yosemite, General Grant and Sequoia parks each summer.

In the parks where the troops were on patrol, the acting superintendent was a military officer, usually a different one each year. In parks not placed under military control, the superintendents were often political appointees. With the exception of the Yellowstone, Crater Lake, and Mount Rainier National parks, where road systems were built by the army engineers, very little road building was done. Fort Yellowstone was built at Mammoth Hot Springs, not so much to combat redskins, as was commonly supposed, as to keep the "white Indians," the grafters, and racketeers from despoiling the park. When Yosemite and Sequoia parks were created in 1890, troops were assigned to them at once. These parks were under military control until 1914, when troops were removed and National Park Service officials assumed their duties. In Yellowstone, the cavalry stayed until 1918; likewise the army engineers.

As a rule, it took from three to seven years after the creation of a national park before funds for its care and

upkeep were provided, and up to 1910 there was little that a non-military park superintendent could do. In that year, following the formation of Glacier National Park, the American Civic Association, led by its vigorous and able president, Dr. J. Horace McFarland, who had carefully watched the growth of the national park idea for years, launched a campaign for the creation of a national park bureau. The Secretary of the Interior, Walter L. Fisher, and President Taft himself, urged Congress to set up a central bureau for the administration of the parks. The President sent a special message to Congress on the subject. Senator Reed Smoot of Utah and Congressman John E. Raker of California introduced identical bills in the Senate and the House creating such a bureau.

That was the situation when Franklin K. Lane became Secretary of the Interior in 1913 upon the inauguration of President Wilson. The parks were the orphans of the federal government. They were nobody's charge and anybody's worry. Officials looked after them in odd moments as best they could. Fortunately, private exploitation of the parks was prevented largely through the efforts of W. B. Acker, chief clerk of the Department of the Interior and an able official and astute attorney.

In 1913, Secretary Lane called Dr. Adolph C. Miller of the University of California to become his assistant, devoting his particular attention to the national parks. However, he was soon drafted by the President to work on banking problems and Secretary Lane was again looking for a man to adopt the national parks. This time he called upon his old college friend, Stephen T. Mather, a Californian, living at the time in Illinois, a man familiar with the great out-of-doors and the West, and a lover of the mountains.

Mr. Mather became assistant to the secretary, and when by Act of Congress of August 25, 1916, the National Park Service was established, he became the first director. Mr. Mather held that position until January 12, 1929, under three administrations, two of them Republican and one Democratic, serving under five different secretaries of the Department of the Interior. To him goes the everlasting thanks of the American people, for he fathered the National Park idea through its most trying period.

The national military parks, and the monuments and other reserves of park character which were established from time to time by the Congress and the President, and the public parks, parkways, buildings and structures such as the Washington Monument and the Statue of Liberty, which have been under special administration or within the jurisdiction of the War Department for many years, were brought into the National Park fold by a proclamation of President Franklin D. Roosevelt, dated June 10, 1933. These additions include such famous battlefields as Gettysburg, Vicksburg, Antietam and Shiloh, as well as all national monuments under the War and Agricultural Departments, Lincoln's Birthplace, the home of Robert E. Lee at Arlington, and all the national capital parks and parkways in the District of Columbia. This order ended the curious inconsistency in arrangement of governmental duties whereby the Battlefield of Yorktown was under the jurisdiction of the Park Service in the Interior Department, while Gettysburg was under the War Department; likewise, George Washington's Birthplace was a national monument under the Department of the Interior, while Abraham Lincoln's Birthplace was a type of national park under the War Department.

The act creating the National Park Service gave its officers authority to "promote and regulate the federal areas known as the national parks, monuments, and reservations," and enunciated the fundamental purpose of the parks: "To conserve the scenery and the natural and historic objects and the wild life therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Those were broad and comprehensive powers. Exercising them, however, was another matter. For years private interests had advanced schemes for the commercialization of the parks, the using of park lands for cattle and sheep grazing, the diversion of waters for irrigation and power, the invasion of the mountains by ugly mining shafts. One of these schemes was successful, the plan of the city of San Francisco to dam the Hetch Hetchy Valley, a miniature Yosemite, flooding the valley with a lake. Another persistent proposal was the draining of water from Yellowstone Lake for irrigation purposes and the elimination of parts of the southwestern area of the park for reservoir sites.

The first job of the new National Park Service was to save the parks from the exploitation schemes already undertaken. In the case of Hetch Hetchy, the building of the dam was already authorized by Congress, and nothing could be done. Under Mr. Mather's administration the National Park Service took the position that if the natural features of a park are sufficiently important and valuable to be placed within a national park by an act of Congress, they should forever remain there, regardless of their value from a commercial point of view, and if they

are not of national park caliber, they should be eliminated from the park by appropriate legislation. The National Park Service has opposed the creation of parks in certain areas because they did not measure up to the standard of the other parks. Among the areas strongly approved for park status by the National Park Service is the Everglades region of Southern Florida. Likewise, the service hopes to see certain areas added to some of the parks, notably Mount Banner and Mount Ritter, the Minarets, and Thousand Island Lake southeast of Yosemite Park, and the glaciers and peaks south of Rocky Mountain Park. Since most of these areas are now federal lands, their addition to the parks involves merely transfer from one government department to another. Of course, Congress may later give national park rank to some of the national monuments like Death Valley and Jackson Hole.

The administration of some of the parks is complicated by the fact that before they were established as parks, private and state holdings existed in them. For example, when Yosemite National Park was established in 1890, over 60,000 acres of its territory were in private ownership. In 1905, the boundaries of the park were revised, and all but about 10,000 acres of the private holdings were eliminated. This delimitation of the park deprived it of a large area of magnificent forests containing fine stands of sugar pine, yellow pine, fir and cedar. Lumber companies later devastated part of these lands, as well as some of their holdings which remained in the park, and which were still under their control because not owned by the Government.

It was not until 1930, under authority of Congress, providing for land acquisition in national parks, one half of the cost thereof to be met by Federal appropriations

and one half by private contributions, that the Yosemite forests were saved from complete destruction. John D. Rockefeller, Jr., contributed nearly \$1,650,000 in financing, with the United States Government on a dollar for dollar basis, the purchase of 15,570 acres of land, over 13,000 acres of which retained virgin forests, including the finest stands of sugar pine, next to the giant sequoia or Big Tree the largest and most stately tree of the western mountains. Another tract of 640 acres of splendid forest was purchased and donated by George A. Ball. Certain of the lands bought in co-operation with Mr. Rockefeller were outside of the Yosemite Park, but by law were included by proclamation of the President.

In 1917, the Giant Forest in Sequoia National Park was purchased with a fund of \$70,000 of which \$50,000 was provided by Congress, and \$20,000 by the National Geographic Society. After this purchase it was over ten years before Congress recognized the private land problems, and made any attempt to solve them.

Since 1928, with appropriations which reached a total of nearly \$3,000,000 and aided by private contributions in large amounts, considerable progress has been made in returning to Government ownership these important tracts of private land which passed out of Federal control before the national parks were created. Much remains to be done, especially in Glacier, Rocky Mountain, Grand Canyon, Yosemite and Grand Teton Parks in the acquisition of lands within park boundaries which are still in private hands.

A similar condition in Yosemite obtained with respect to roads. Prior to the creation of the National Park Service, all of the roads built into Yosemite Valley were pri-

vately constructed and owned. The Wawoma Road was constructed by a turnpike company which at first transported passengers by horseback, then by horse-drawn stage, and finally by automobile. One of the first problems of the Director was to persuade this company to turn the road over to the public in exchange for a grant for the exclusive use of the road for stagecoaches during a certain number of years under government maintenance.

An even more interesting situation prevailed with respect to the Tioga Pass Road, one of the most spectacular scenic drives in any of the parks. This road was built by a mining company across the heart of territory that is now Yosemite Park, before the creation of the Park Service. Fortunately, the mines did not pay and they were abandoned. The company still owned the road. Government funds were lacking to purchase it, and Director Mather, with some friends, bought it privately and deeded it to the federal government, thus providing Yosemite with a route into the high Sierra country.

In Grand Canyon there have been some delicate administrative problems that have hampered the superintendents and the rangers in their efforts to serve the public. Most of them arose from private ownership of holdings in the park. Local Arizona politicians, through control of affairs in a county adjoining Grand Canyon National Park, tried to block government access to the Bright Angel Trail, the main route into the Grand Canyon. It was this situation which roused President Theodore Roosevelt to declare the Grand Canyon a national monument in 1908. That checked privateering, and in 1919 Congress made the area a national park. However, it was not until 1926 that the last mining claim was canceled by the courts,

after it was proved that minerals did not exist in sufficient quantities to justify the claims.

In the meantime, other trails were built into the Grand Canyon, and the original offer of the federal government to the county in question was reopened; namely, that in exchange for government ownership of the Bright Angel Trail the United States would build an approved approach road to the park through that county. Sometimes it is impossible to "do business" with the local owners of roads and trails. The instance of the Coulterville Road into Yosemite Valley is an interesting example. Failing in their efforts to persuade the owners of this road to make it public property, the park superintendent ceased to maintain the road within the park. The public traveled the roads which were improved and kept up. Today the Coulterville Road is merely a forest protection trail.

Before the boundaries of Rocky Mountain National Park were revised, and large areas of lands purchased in 1931, visitors often were obliged to go miles to find a place to camp, for the reason that the roads ran through private lands plastered with "No Trespassing" signs. This often stirred Sagebrushers to anger and criticism of the National Park Service. Of course, this situation was inherited by the service when Rocky Mountain Park was created, and was no fault of the Service in any degree whatever.

It is the policy of the National Park Service to keep vast areas of the parks in absolutely natural condition, and for that reason road-building plans contemplate making accessible only the most unusual and distinctive features of the parks. As a rule, one main highway across a park is enough. To care for the enormous number of Sagebrushers who come to the parks each year, it is necessary to hard-

surface all roads and make them dustproof, else the beauties of the parks are destroyed by those who want to enjoy them.

Leading off from the roads are trails over which the wilderness lover can find the solitude he craves. Some sections of the parks are denied even to the trail rider. They are remote areas reserved for Nature exclusively and for future scientific study. About the only wilderness areas remaining in the United States are found in the national parks. Vast areas, including more than half of the territory of the parks, are so far off the beaten paths that they are visited by but few parties a year. It is hoped that they will never become civilized, even when the airplane makes all spots of the earth accessible, that they will remain as wild, as unblazed and untouched as were the mountains of the West when Jim Bridger and Kit Carson and other pioneer scouts first pushed into them.

The northern half of Yosemite Park is a wilderness area of more than a quarter of a million acres. Nearly all of Grand Teton, Olympic, Kings Canyon, and Glacier Parks, fully two-thirds of Yellowstone's great area, the vast Kern River extension of Sequoia Park, are all untouched, unblazed wilderness. The same is true of much of the Grand Canyon below the rims, that part of Zion above and beyond the rims, a very large part of Big Bend and Rocky Mountain Parks, and over half of Mount Rainier Park. These areas are accessible only to the person who so desires to get away from civilization that he will ride the trails for days on end with only guides, wild animals, mountain peaks, turbulent rivers, forests, and glaciers for company. In the vast areas colloquially known among the rangers as "the back country," the nature lover can always find glorious solitude.

In the earliest acts of Congress relating to the parks, provision was made for the granting of concessions under franchise for private concerns to erect hotels, transportation lines, and other service facilities. This policy, still fixed by Congress, continues. The Secretary of the Interior is authorized to grant franchises for terms not exceeding twenty years for the construction and operation of facilities in the parks. The secretary approves the franchises, which are specific grants of privileges to be exercised within the park boundaries. These privileges must be exercised in accordance with the law and the rules and regulations governing the parks. Service must be rendered according to standards laid down by the secretary and his representatives and at rates prescribed by the secretary.

It is the policy of the Government to grant only one franchise for a certain type of service in a park. If extensions of service are necessary, the secretary calls upon his franchise holder to furnish the additional service. If the operator fails or refuses to comply, the secretary may cancel the franchise or he may let another operator furnish the needed service. In other words, the franchise holder has the preferential right to furnish additional service when need arises.

In the early days of the parks, no one was able to furnish sufficient capital to build hotels and to establish transportation lines except the railroads. In the case of several of the parks, all of the early facilities were established by interested railroads in order that they might offer proper accommodations for their passengers. Even today this condition still prevails in some of the parks, notably Zion and Bryce Canyon National parks and the North

Rim of the Grand Canyon, where the Union Pacific has financed improvements, and the South Rim of the Grand Canyon, where the Santa Fe Railroad and Fred Harvey have constructed facilities at great cost. Also in Glacier Park the Great Northern built a magnificent chain of hotels and chalets. In Yellowstone, the hotels were built originally by the Northern Pacific Railroad. Later they were taken over by another company, which operates both the chain of hotels and the extensive motor transportation system. In Mount Rainier National Park the hotel was originally financed by the Chicago, Milwaukee & St. Paul Railroad, and later was taken over by a group of citizens of Seattle and Tacoma, interested in developing travel to the Northwest. Public-spirited citizens of Portland financed the establishment of facilities in Crater Lake Park.

In Yosemite the history of the operators in the park has been a varied and an interesting one. The first inns in the valley were little more than bars, and greater emphasis was laid on this phase of hospitality than on comforts. Californians were quick to appreciate the business possibilities of travel, even in the early days, and within three years after the first party of tourists, led by J. M. Hutchings, visited Yosemite Valley in 1855 two inns had been built in the wilderness. The first of these was a saloon, built in the fall of 1856, to accommodate those early travelers who demanded their whisky and their game of cards even in the shadow of El Capitan. The next year it became apparent that visitors wanted to eat as well as to drink in Yosemite, and the restaurant feature was added as an afterthought. This building later became

Black's Hotel, famed mainly as the home of John Muir after his rupture with Hutchings.

The second of these inns was a blue canvas structure erected by a man named Beardsley and later torn down to make way for a wooden structure which Hutchings bought. For years Hutchings' House was one of the landmarks of Yosemite and one of California's famous hostleries. It achieved its personality more through the geniality of its host than because of its comforts, which were notoriously lacking. For some time Hutchings' House consisted of two rooms, one upstairs, one down. The women were herded upstairs to sleep. The men stayed down. Visiting notables, often nobles from abroad, slept side by side with nobodies. Later, Hutchings improvised rooms of paper walls, with curtains for doors, and gentlemen were allowed to sleep with their wives in Hutchings' House, though even whispers were heard all through the house and the shadows made lively pantomimes on the partitions. These little discomforts, for the most part, were taken in good nature by the guests and laughed off as the shortcomings of a host who recited poetry as he served breakfast in the morning.

Another old inn, popular in its day, was Leidig's Hotel at the foot of Sentinel Rock. The old Stoneman House was built by the state of California to attract visitors to the leading wonder of the Golden State. It was destroyed by fire. Another picturesque inn was Snow's House at the foot of Nevada Falls, crude in its accommodations but warm in its hospitality. Another show place was John Smith's Cosmopolitan House, a place of simple exterior, but equipped with a barber shop, a pool hall, a writing-

room, and—wonder of wonders—bathtubs with hot and cold water. Smith packed in on horseback the furnishings for his hotel, including bathtubs, full-length mirrors, elaborate glass goblets, and an amazing array of luxurious equipment.

The originator of the permanent camp idea in the national parks and probably in the United States as well was W. W. Wylie, who in the early 'nineties began taking parties through Yellowstone National Park with covered wagons, saddle horses, and other movable equipment and stock. For years he took ever increasing numbers of people through the Yellowstone, making camp each night, putting up cook tent, sleeping tents, canvas shelters for horses and wagons. The melodeon furnished music for community singing around campfires in the evening, and Professor Wylie lectured for a while each evening on the features of the park. After a while his parties grew so large that he had to have several outfits. He purchased comfortable stages for his guests. Soon he found that he could not keep on moving these big parties with equipment that had to be taken down each morning and set up each night. He arranged finally to leave his camps standing at several points in the park. His application was resisted by the railroad owning the big hotels, which were not paying interest on their cost, and with which the camps were competing. Mr. Wylie won his case, however, on the ground that there was a demand for cheaper service than the hotels furnished. Meanwhile, the railroad established a policy of rate-making which provided that reduced summer excursion fares should apply only to the park hotels and should be sold only in connection with hotel tickets. This came near ruining the camp business,

but Mr. Wylie fought the company before the Interstate Commerce Commission and won the right to have all excursion tickets read either via the hotels or camps. Afterward the railroad sold the hotels and Mr. Wylie sold the camps, which are now known as the lodges of Yellowstone.

Many years later, in 1917, Mr. Wylie, then an old man, pioneered in establishing camps in Zion Park and on the North Rim of the Grand Canyon of the Colorado. The last Wylie Camp was purchased in 1927 by the Utah Parks Company, a subsidiary of the Union Pacific system, to be operated as part of its utilities on the North Rim.

One summer in the 'nineties, Mr. and Mrs. David A. Curry, at that time teachers from Indiana, took a party of people through the Yellowstone via the Wylie Camps, or "Wylie Way," as they were known for years. When the Currys came to California a year or two later, they started business in Yosemite Park along the lines of Mr. Wylie's camps in Yellowstone. The Curry Camping trips eventually grew into Camp Curry, one of the most successful undertakings in any of the parks.

Most of the other park concessions had equally humble beginnings. The Longmire family and John Reese pioneered in Mount Rainier Park. Will G. Steel and Alfred L. Parkhurst first developed service at Crater Lake. Visitors to Grand Canyon for many years camped out overnight on the long trip overland from Flagstaff to the Canyon at crude lodges built by W. W. Bass and Captain Hanse. Improvements in automobiles and the building of new roads and railroads have brought new thousands demanding accommodations. Many of the pioneers in the business of entertaining guests at the parks have had to

sell out to great companies with sufficient capital to meet present-day demands. Whenever difficulties have forced the retirement of these pioneers, the National Park Service has insisted that they be paid fair value for their properties, though failure to render service under terms of the franchise meant forfeiture of concessions. These pioneers labored against great natural difficulties, short seasons, remote distances, and uncertain travel, and they deserve both sympathy and praise.

Present-day operators likewise have their problems. In Grand Canyon Park, for instance, the operators of El Tovar Hotel must haul water for gardening and other purposes in tank cars for one hundred miles by rail at a cost of several dollars per thousand gallons, and for human consumption powerful electric pumps bring water to the South Rim from the Springs at Indian Gardens, 3,000 feet below the rim. On the North Rim, water is lifted by pump thirty-five hundred feet, more than half a mile, from a stream in the Canyon. This stream first generates the electric power which operates the pumps to force the water to the rim. Many of the hotels and lodges are great distances from railroads. Hauling perishable foodstuffs to these establishments was extremely difficult in the days of horse-drawn vehicles. It is still costly, even with motor trucks, and must be taken into consideration in the fixing of rates for service at the park hotels and lodges. In many of the more remote camps, supplies must be packed in on mules over high mountain trails.

In practically all of the parks the main concessions are now in the control of one company, charged with offering the visitor every service he needs whether it is profitable to the concessioner or not; but this company rarely has

privileges in more than one park. Large companies can do this, compensating for temporary losses in one branch of the service by profits in other branches. Each year the concessioner must submit a plan for his operations during the ensuing year, together with a schedule of rates, to the superintendent of the park, who in turn submits it to the Secretary of the Interior at Washington. In this way, the public is assured of the services that are needed at fair and reasonable prices, and the citizens who invest their capital in the expensive hotels, lodges, and stage lines, needed to give good service, are assured that they will make a fair return on their investment. It is the aim of the National Park Service to have a type of service in every park to suit every taste, ranging from simple house-keeping camps up to luxurious hotels.

It is part of the duties of the superintendent and his rangers to see that the visitor to the park receives the type of service he wants. Sagebrusher Jones arrives in his Super-Four, loaded with Mrs. Jones, all the little Sagebrusher Joneses, sundry bedding, camp stools, pots and pans, and food. He wants to see the park as inexpensively as possible and intends to establish his own household with his own equipment, plus whatever the park can supply.

"All right," says the ranger, "there's a fine camp for you, right over there. It costs you nothing. If you want a tent already put up, you can get it for a dollar a day from the housekeeping camp headquarters. There's a store over here and a cafeteria. Help yourself to wood from this pile. If you don't find everything all right, let us know. Baths? You can get hot or cold showers in that little building for twenty-five cents apiece."

The Simplex Sixes arrive in the park in their new car.

They are Sagebrushing it de luxe, as it were. They want to wear their sweaters, knickers and rough clothes.

"Well, you'd better stay away from the hotel, then," says the ranger. "You girls can get into the dining room in any old clothes, but the old gentleman there can't get in without his coat on. I don't care if his chamois jacket did cost a hundred bucks. The dining room isn't open to anyone without his coat. You'd better go to the camps. There's more life there, the cabins are just as comfortable as hotel rooms, and you can wear your jacket if you want to. That's the way I would go, if I were here for fun."

Along come the Strait-Aights, with their liveried chauffeur. They have the big bank account and the clothes (in the big trunk on the back) and they want all the service that money can buy. They consult the ranger at the ranger station.

"Yes, sir, there certainly is a good hotel in this park," he tells them, "you can have all the comforts of home, including a bath. Meals are fine, American plan, yes, sir. That's where you want to go."

Probably the ranger has never had a meal at the fine hotel, but he knows the kind of people who do have them there. That is his business. Then there are the Dudes. The New York Dudes, you know, with the trunk full of hiking clothes, riding clothes, morning clothes, afternoon clothes, lounging clothes, and evening clothes. They are headed for the hotel. The Dude from Oshkosh who had been teaching school all winter to save up a couple of hundred dollars for a vacation in a national park is something else again. She wants good value for her money. She goes to the camps. But everybody gets what he wants.

And where does the ranger live?

He has a bunk in a cabin, or a rangers' clubhouse, but he doesn't use it much except when he is asleep. After the Dudes and Sagebrushers have been directed to the camps, lodges, or hotels, the ranger has to see that the water supply is plentiful and pure, that the electric light plant is going, that the wild animals are protected, that the telephone and telegraph lines are working, that the vandals are rounded up and brought to justice, that the roads and the bridges are kept in repair, that the forest fires are put out, that the sanitary system is working, that the fish are planted in the lakes and streams, that the trails are rebuilt, that nobody is lost in the mountains anywhere, that the geysers are working, that nobody carves his initials on the big trees, that the museum is kept open, that the stages run on time, that the traffic moves in the right direction, and after that—well, there isn't much of anything to do until tomorrow.

"What do rangers do all winter?" Dudes and Sagebrushers are always asking that question. There seems to be an idea that rangers must pine away for want of something to do. As a matter of fact, the rangers have plenty of work all winter long. In the evenings they are ready for rest. They are great readers, not merely of popular magazines alone, but of the so-called quality magazines and many of them are good writers, and contribute frequently to magazines and Sunday newspapers. Some of them are studying, through correspondence courses. But even with the opportunity winter brings to the rangers, each to pursue his hobby, they are glad to see the spring, for—if spring comes, can Dudes be far behind? In the rhyme of Ranger Dan Anderson:

There's a bunch of spoutin' geysers blowin' steam for all
they're worth,
And the waterfalls are makin' quite a din,
And the fragrance of the flowers wastes upon the empty
air
While waitin' for the season to begin.

The ranger's gettin' ready for the comin' of the Dudes,
For in winter they are lonesome as all sin,
And the bears are growlin' hungry 'round the empty gar-
bage dumps
While waitin' for the season to begin.

Soon the folks will ask fool questions 'bout everything in
sight,
And the 'jammers claim the tips are extra thin,
But in spite of all the cussin' one and all we're mighty
glad
To be waitin' for the season to begin.

THE WORLD WAR AND THE PARK SYSTEM

AFTER Pearl Harbor, the administration of the national parks and other reservations under the jurisdiction of the National Park Service was adjusted to requirements of America's great program for achieving victory over her enemies.

The parks were open as usual in 1942, but large hotels and other facilities, certain to be operated at serious financial loss, were closed or made only partially available to the public. All special railroad service was cut off. In the Rocky Mountains auto travel was light. Then came gasoline rationing and with it curtailment of tourist travel to a mere trickle. Parks on the Pacific Coast, the Grand Canyon and Carlsbad Caverns became favorite destinations for organized recreation tours for members of the Armed Forces, and hundreds of thousands of uniformed men and women visited these famous areas in the years 1942 to 1945 inclusive. The Navy took over the Ahwahnee Hotel in Yosemite as a rest station for its veterans, and a large recreation camp was also established for the Services at Grand Canyon. Carlsbad Caverns Park, located near the great military post of Fort Bliss and several air bases of the Army, was a prime favorite for excursions by groups and individuals on brief leaves from their units.

There were essential communication and other installations by both Army and Navy on mountain tops and in other parts of national parks and monuments. Colonial National Historical Park, with its Yorktown battlefield and parkway over to Williamsburg, played its part. It has the

unique distinction of having had some territory used first in the Revolution, then in the War of 1812, next the Civil War, and finally World Wars I and II—five wars in all. The Army and Navy used park lands carefully, and, as the leased areas are returned, they are quickly restored to their pre-war condition.

Efforts, of course, were made to secure concessions in the parks for exploitation of their resources on the plea that they were needed to meet national emergencies. Pleas for stock grazing privileges and rights to take minerals were backed by strong political pressure which the Director of the Park Service and the Secretary of the Interior successfully resisted. Considering the magnitude of the war effort and the colossal demands for production of food and materials for war equipment, it is gratifying that precious territory and rare resources were held inviolate.

The personnel of the Park Service responded to the calls of war service. A large part of the field organization was in the Armed Forces by 1943. Many rangers have been Army, Navy, Marine, and Coast Guard officers, and men of the Service, both from the parks and the Director's office, have risen to grades as high as lieutenant colonel and commander. Assistant Director Conrad L. Wirth has been in Germany and Austria as a colonel on the staff of the Army Occupation Chief. The Ninety Day Wonders of the parks were young, but they did good work in the best traditions of the services to which they belonged.

Unfortunately the Director's office had to be moved to Chicago during the war, and this proved to be a great handicap to good bureau administration because of the distance from the Secretary of the Interior and interested Congressional Committees. Regional offices were almost completely

stripped of personnel.

New policies are in the making. For instance, it is frankly stated that all private concession structures in the national parks and monuments should be owned by the Government in order that they may be managed more completely in harmony with the program for protection of park features. It is intended that facilities may still be leased for private operation. However, in the absence of a suitable private operator, a non-profit corporation under Government control may be granted a concession. Tourist facilities in several parks are now under management and operation by this company which is called National Park Concessions, Inc.

The National Park Service is still an outstanding organization and apparently is highly regarded by the people of the States in which its charges lie. It had a difficult political problem to face in 1943 when in Wyoming considerable opposition to the newly established Jackson Hole National Monument was voiced in Congress and the Federal Courts. A bill abolishing the monument was vetoed by President Roosevelt, and the Court handed down a decision confirming the order creating the reservation.

Looking back to the early thirties, when the Civilian Conservation Corps and other agencies with relief funds greatly advanced many conservation projects, the late National Park Director, A. B. Cammerer, led the Park Service successfully through the depression years. Then reviewing the management of park affairs in war time, with all its terrific pressures which were successfully met by Director N. B. Drury, the present head of the organization, we see continuous success in maintaining the high standards of park protection and operation that were set in the days of Mr. Mather and his associates.

There are now four regional offices which stand between the Director and the local park area administration. These are located at San Francisco, Omaha, Santa Fe, and Richmond. It remains to be seen whether they will aid or retard the work of the local executives who have always had large responsibilities and authority commensurate with them. There is always danger that Government agencies will become ends in themselves. In the National Park Service, the objectives should always be, first, preservation of the natural features of the park areas of every group and all their historic sites and structures; and second, provision for their enjoyment by the people.

The Dudes and Sagebrushers respect and admire the National Park Service and its policies and personnel, especially the rangers, the ranger naturalists and ranger historians. They want to see the bears, the bison and the beaver, the geysers, canyons, and forests. They want to fish in the lakes and streams and possibly swim or canoe in their crystal-clear waters. They want good facilities for enjoying everything a park has for them. They do not ask for, nor expect, large sections of the great scenic parks opened by roads. They are content for the most part with highways already built or projected. Their vacations are all too short and itineraries too long. The Dudes and Sagebrushers are out for fun and excitement as well as inspiration, and so expect a large measure of recreation with their sightseeing and nature study. Recognition of these observations which are primarily those of the rangers will keep the officers of the Regions and the Washington headquarters from making their fine organization just another bureau.

GLIMPSES OF THE NATIONAL PARKS AND OTHER NATIONAL RESERVATIONS

"WHAT's the best national park?" is a question that only a ranger can handle. Every ranger knows that answer. The park in which he is working is always the best park—and he is willing to fight anyone who says it isn't. Transfer him to duty in another park and that is the best park right off the bat. Each ranger is as loyal to his particular park as is a college grad to his alma mater. And any national park superintendent can prove to you conclusively that his park is superior to all others—in some way!

That is why each national park is formed—to preserve some outstanding and incomparable natural wonder or scenic beauty spot or historic area. Of each it can be said truthfully, "There is nothing like this anywhere else." That is true of each of the twenty-seven national parks and of the Everglades which is a national park in the making. Generally speaking, it is likewise true of each of the national monuments and most of the historic reserves. Each is established to preserve for public enjoyment and education some remarkable geographical formation or unusual historic area or outstanding historic landmark.

So in planning holiday trips to the national parks and monuments a traveler must bear in mind always that each reserve is entirely different from others. To illustrate, the supreme natural feature of Mount Rainier National Park is a stately, snow-covered mountain, an inactive volcano, capped the year round by snow and ice which feed the twenty-eight glaciers that flow down its sides. Yellow-

stone's six geyser basins contain more "hot water volcanoes" than can be found in all the rest of the world put together. Nowhere else will the traveler find granite walls so stupendous as in Yosemite Valley; nowhere else will he find waterfalls so high, cliffs so precipitous. Sequoia National Park preserves the finest groves of giant sequoias, including the largest living tree on the earth, the General Sherman. Crater Lake's deep blue waters fill the colossal cavity left in the top of mythical Mount Mazama when this ancient volcano caved in and disappeared in its own depths ages ago. Mount McKinley National Park surrounds and includes this continent's loftiest peak, rearing its crest 20,300 feet above the sea. Grand Canyon National Park is an example of how the forces of erosion have combined to carve the most stupendous chasm on earth. Hawaii and Lassen National Parks contain the only active volcanoes in our possession, but in every other natural feature these parks differ one from the other, and the volcanic activity of each hardly bears comparison. No matter how many parks you include in your itinerary, each will be different from all the others.

The majority of the national parks are wilderness areas, preserved in their natural state, and bear no resemblance to the cultivated city areas that most people associate with the word "park." Some of them cover enormous areas, as large as certain eastern states, and, for the most part, they lie considerable distances apart. If you have only a brief vacation holiday, it is better to try to visit only one or two parks. If you attempt more in a short time, you may find that you have what experienced travelers call "scenic indigestion"; you will see more than you can assimilate with any degree of satisfaction.

It is the purpose of our last section of "Oh, Ranger!" to briefly describe the principal features of the national park system. Our readers know, of course, that this book is concerned chiefly with the great parks and monuments of the western mountains and deserts, the activities of their rangers and other officers, and the experiences of the fortunate folks—dudes, sagebrushers and park workers—who have lived in them for longer or shorter periods of time as the years have passed. However, no book on national parks is complete without some reference to the historical parks, the battlefield sites and markers, certain very famous buildings and memorials, and the parks and parkways of Washington, the National Capital, all of which are under the jurisdiction of the National Park Service. Therefore these closing pages will bring together, in several more or less distinct divisions, vignettes of all the areas and structures that compose the national park system. The grouping here is partly official and partly our own.

I. THE NATIONAL PARKS

These parks are reserved and dedicated by Act of Congress, and, as a rule, they have been carved out of the public domain and set apart as national parks because they contain scenery or other natural phenomena so unusual and distinctive as to make their preservation in essentially their primal condition of national importance. There are twenty-seven parks in this group, and they embrace an area of more than eleven million acres.

THE PARKS OF THE PACIFIC COAST

YOSEMITE NATIONAL PARK

Yosemite is best known for its incomparable valley, surrounded by sheer granite cliffs—mile-high Half Dome, lofty El Capitan, Glacier Point, and other granite sentinels—and for its majestic waterfalls, Vernal, Nevada, Yosemite, and Bridal Veil. The Valley was hewn eons ago by the combined forces of three huge glaciers which met head on. The churning of the ice, pushed by countless millions of tons of pressure, scraped out the canyon which has since become a peaceful forest vale one mile wide, eight miles long. Though the mecca of tens of thousands of travelers, the Valley is but a small portion of the 1,182 square miles of magnificent high mountain country which makes up the park.

Yosemite National Park rises in the very heart of the Sierra Nevada, said to be the world's largest single mountain in one colossal block of granite 400 miles long. This block was slowly pushed out of the earth in ancient upheavals. From the eastern ramparts of the Sierra Nevada, where Mount Lyell and several other peaks rise to an altitude of more than 13,000 feet, the park slopes gradually down to 2,000 feet at El Portal, the western entrance. Between these altitudes lie great mountain peaks, magnificent forests, scores of lakes, cascading streams, waterfalls, meadows, and living glaciers—all connected by 650 miles of safe and accessible trails. There are three fine groves of giant redwood trees (*sequoia gigantea*) in Yosemite. The greatest is the Mariposa Grove, containing many venerable giants perhaps more than 3,000 years old. The Wawona tree, so huge that a large bus can pass through the tunnel in

its trunk, is doubtless the most famous tree in the world.

Yosemite has an especial attraction for each season. In spring the waterfalls are then at their best; in autumn the blazing color of the forests are superb; and in winter there is the deep blanket of snow which attracts thousands of winter sports lovers. Camps are maintained in the high country for those who travel over tree tops on skis.

SEQUOIA NATIONAL PARK

Sequoia is the land of giants, having been created to preserve fine groves of giant sequoias, the world's largest and oldest living things. This park lies near the southern tip of the Sierra Nevada Range and covers an area of 385,100 acres.

Many of the big trees are conceded to be from two to three thousand years old, and several may be much more ancient. The General Sherman Tree, said to be the largest and oldest tree on earth, is probably between 3,500 and 4,000 years old. Its diameter is 36.5 feet, and it towers 272.4 feet high. The tree was standing when the pyramids of Egypt were being constructed more than two thousand years before the birth of Christ.

The Sierra high country in which these forests grow is an ever-changing panorama of woodland, plunging streams, and lakes rising to the granite crest of the Sierra Nevada Range, so dazzlingly brilliant in the California sun that John Muir called the mountains the "Range of Light." Mount Whitney is in this range. Its altitude is 14,494 feet and, excluding Alaska peaks, it is the highest elevation in the United States' possession. The streams and lakes of the park are plentifully stocked. Sequoia is the natural habitat

of the rare golden trout. The forests abound in bear, deer, and other wild life. The park is accessible all year, although the main travel season is from May 1 to October 1.

KINGS CANYON NATIONAL PARK

Kings Canyon National Park lies to the north of Sequoia and adjoins this park. Kings Canyon was created in 1940, incorporating the former General Grant National Park as well as many additional miles of unsurpassed scenic beauty—707 square miles all together. Like its neighbor park, Kings Canyon's claims to fame are groves of giant sequoias and extraordinary mountain scenery.

The General Grant Grove Section, containing the former park with the addition of the Redwood Mountain area, forms the gateway to the stupendous, granite-walled Kings Canyon. The former section rivals in grandeur those trees of Sequoia Park with the General Grant Tree being 267 feet high in contrast with the General Sherman's height of 272 feet. The General Grant and thousands of other spectacular giant trees are rare visual treats for the visitor to this park.

In addition to the tree area, there are new thrills on every side—granite gorges, beautiful meadows, trout-filled streams and lakes, trails through virgin forests, and peaks of the Sierra Nevada mountains, including sights of Mount Whitney, the highest mountain in the United States. Some of the loveliest spots of the park are available only to those who ride horseback or hike because an effort has been made by the officials of the Park Service to keep this a real wilderness park.

Kings Canyon National Park is open the year round.

However, this all-year basis applies only to the General Grant Grove area. The remainder of the park is open only from May to November.

LASSEN VOLCANIC NATIONAL PARK

Lassen Volcanic National Park, at the northern tip of the Sierra Nevada Range in California, preserves under Government control the only active volcanic peak in the United States proper. Lassen's purpose in the scheme of things apparently is to fuse the volcanic Cascade Range with the granite Sierra Nevada. Though Lassen Peak still grumbles and smokes, its activities are rare except for the numerous boiling lakes and mud pots on its slopes.

Lassen's superiority over all other peaks lies in its collection of interesting lava flows. Some of them are quite recent; the last eruption was in 1914. Others, notably Cinder Cone, an ancient volcano, are in a state of disintegration. In spite of its volcanic origin, Lassen Peak is not a barren area. It is a region of fine forests, many streams and lakes, and fine mountain scenery, accessible by good trails. A road that is open from the middle of May to the same time in October climbs the shoulder of Lassen Peak; it brings you within a short walk of the crater. Lassen Park covers an area of 163 square miles.

CRATER LAKE NATIONAL PARK

Crater Lake National Park is Oregon's contribution to the national park chain. Located in the heart of the Cascade Range, it covers an area of 250 square miles, and it is unique because its central feature is a lovely azure lake in the very

backbone of the Cascades. Some geologists say that where Crater Lake lies there was once a magnificent volcanic mountain, given the mythical name of Mount Mazama, though no human eye ever saw it. This was one of the loftiest peaks in the entire land, and it belched forth lava and cinders until it was so hollow, according to the theory, that its walls weakened and caved in, leaving the vast opening to fill with water and become what we know today as Crater Lake. Though it has no apparent outlets, Crater Lake's waters are clear and fresh, and the blue color challenges description.

The approach to Crater Lake from either side is through long lanes of towering pines, firs, and spruces. The park is accessible the year round, and every year larger numbers of visitors are attracted here to see the beautiful lake against a background of white as well as to enjoy the excellent winter sports.

MOUNT RAINIER NATIONAL PARK

Mount Rainier so dominates the Northwest that the people of the Puget Sound area speak of it simply as "The Mountain." The national park surrounds the slopes of Mount Rainier, covering an area of 377 square miles. The mountain itself is the relic of an ancient volcano which, at one time, rose more than three miles above the sea. Storms, snow, and ice have ground away the mountain top until, at the present time, its altitude is 14,408 feet. From an enormous crater left from the volcanic action, great glaciers developed covering the peak like a colossal ice octopus. In all, there are twenty-eight of these rivers of ice, many of them reaching far below timberline.

Below the region of ice and snow, magnificent forests grow so dense that it is almost impossible to penetrate them except by sawing trails. Above the forests are a chain of mountain meadows which each spring and summer become a veritable blanket of bright-colored wild flowers. So eager are these flowers to poke their heads up in the spring that some do not wait until the snow recedes but often literally grow through the snow and burst into bloom.

Mount Rainier National Park is always open. It is one of the few places where winter sports may be enjoyed all year because the snows never entirely melt.

OLYMPIC NATIONAL PARK

Olympic National Park in Washington is a mountain wilderness of more than 1,325 square miles. Here the visitor may see spectacular scenic beauty ranging from deep canyons and broad valleys to towering ice-clad mountains; from lovely, flower-filled meadows to swift streams and sparkling lakes; from bleak granite walls to deep primeval forests. Surrounded by land, this park, however, is near the Pacific Ocean, and because of this great source of moisture the forests are almost tropical in their luxuriance. From this jungle-like setting rises a series of jagged peaks, soaring sheer from the sea to their summits, the highest being Mount Olympus which is 7,915 feet above sea level. This wild mountain area has not been completely explored due to the precipitous nature of the rocks, the severe cold of the higher altitudes, and the extensive glacier system, one of the largest on the continent. A wide variety of flowers and wildlife may be seen in this park, the most famous of which is the rare Roosevelt elk.

THE PARKS OF THE ROCKIES

YELLOWSTONE NATIONAL PARK

Yellowstone is the oldest, largest, and most wonderful national park and therefore is the best known. Many regard it as one of the most beautiful parks because of its vast forests, its great open meadows, and its lakes and streams, while others love it for its wilderness charm, its unspoiled back country and its wild animals and gorgeous flowers. Of course, its boiling springs, geysers and pools of hot water particularly distinguish the Yellowstone and were features that the park was originally established to protect.

The area of the park is 2,213,206 acres, equal to Delaware and Rhode Island combined. It lies partly in Idaho, Montana, and Wyoming, but mostly in the latter state. The average elevation is around 7,000 feet, but many peaks exceed 10,000 in elevation, and Mount Washburn, part of the crater of an extinct volcano, 10,317 feet high, is accessible by car to its very summit.

Now, what is there to interest you in Yellowstone? More geysers than in all the rest of the world combined. One of them, Old Faithful, is the most dependable geyser ever known. It erupts every hour. There are more than three thousand boiling pools and fountains and seething hot mud pots. Near the northern boundary of the park are the Mammoth Hot Springs where beautiful limestone terraces have been built by the hot waters in which plant life, known as algae, assist in the deposit of the lime.

The Yellowstone is a land of color. Not only does it exhibit brilliant vegetable coloring through its hot water

algae, but its rocks in all parts of the vast volcanic plateau have color—red, yellow, brown, green, and white, with infinite combinations and exquisite blending. The canyon of the Yellowstone River is a natural canvas in deepest orange, faintest yellow, reds ranging from the softest pink to the most vivid crimson, blacks and grays and pearls and glistening white. Greens are furnished by the dark pines, or the lighter shades of the leafy shrubs, or the foaming emerald of the plunging river, while above are the ever-changing blues of the Rocky Mountain sky, perforated by the fleeting, fleecy clouds. The canyon is a spectacle which one gazes at in silence. Its overwhelming stillness is interrupted only by the foaming waterfalls and rushing cascades. Steam rises slowly from vents in the rainbow cliffs. Ospreys with fish in their talons sweep up from the cascades to nests on the slender, natural minarets. The Yellowstone canyon is truly "Nature's Masterpiece of Art."

There are scores of lakes and hundreds of miles of trout streams in the Yellowstone. Lake Yellowstone is twenty miles long and fifteen miles wide. It has one hundred miles of shoreline, and its surface area is ninety thousand acres. All of the park waters are stocked with fighting trout and gamy grayling. At Fishing Bridge over the Yellowstone River, more trout are caught each summer than in any other trout water on earth.

The park's hundreds of miles of primeval forest abound with wild life. Here is the greatest sanctuary of birds and animals on the continent. Here the patient camera hunter may stalk the grizzly and black bear, the elk, moose, antelope deer, wild swan, geese, and a host of other denizens of the forests and streams. In high valleys, our largest buffalo

herds, numbering nearly 800 animals, roam the range as they did in the days of the pioneers.

Yellowstone's season is from early June to the middle of September, but if the roads permit and you can prove to the rangers that you can take care of yourself and have the necessary equipment, you will be admitted later. October is often a glorious month in this park.

GRAND TETON NATIONAL PARK

In magnificent contrast to the volcanic Yellowstone area, the Teton Mountains rise in one of the most abrupt and stupendous outcroppings of granite (technically, the geologists tell us it's gneiss) in the western hemisphere. Grand Teton National Park, established in 1929, includes the finest part of this noble range as well as several lovely forest-bordered lakes. This park is south of the Yellowstone and is separated from it by a narrow strip of territory which remains in a national forest. The area of the park is 150 square miles.

From the shores of the series of lakes, the Tetons lift their spired peaks almost perpendicularly. The monarch of them all is the Grand Teton whose summit altitude is 13,766 feet. Many glaciers rest upon their slopes. At their feet nestles Jackson Hole, a region rich in romance, once the favorite hiding place of western bad men, but now a center of the dude ranch industry and included in the Jackson Hole National Monument.

Fishing, riding, hiking, and mountain climbing are all popular sports in this national park. Like Yellowstone it is closed from late September to early June.

GLACIER NATIONAL PARK

Glacier is the land of the "shining mountains," to use the descriptive term of the Blackfeet Indians whose reservation adjoins the park. When Nature fashioned these celestial heights, she gave little consideration to future political divisions, and consequently the "shining mountains" of the Montana Rockies extend into Canada where they are known as Waterton Lakes National Park. Glacier Park covers an area of 1,583 square miles. Its average elevation is about one mile above the sea, but many of its peaks rise to 9,000 feet or more. An ancient upheaval, followed by what geologists call faulting, brought these mountains into being, and then glaciers carved them into scores of canyons, each having its ice fields, its chain of alpine lakes, its meadows, and its verdant forests. The best way to see the charmed Glacier high country is afoot or on the upper deck of a trail pony such as you may select from the several hundred saddle animals available to summer visitors. Hundreds of miles of splendid trails wind through the forests, past the lakes of which there are more than 250, over the breath-taking passes, and across the living glaciers. These trails meander repeatedly over the Continental Divide, and at Triple Divide Pass you may see the waters from the glaciers flow three ways—into the Pacific, the Atlantic, and the Hudson Bay.

Highways skirt the east and west borders of Glacier National Park, connecting the several valleys, and extend to Waterton Lakes in Canada. The spectacular Going-to-the-Sun Highway crosses the Continental Divide at Logan Pass, providing one of the greatest scenic motor routes for automobile gypsies in the country. The Blackfeet Indians are

your neighbors in this park. They are picturesque people and lend romance and color to the whole region.

Winter takes possession of Glacier Park early, and the season is over by about September 15. It opens the middle of June.

ROCKY MOUNTAIN NATIONAL PARK

In Rocky Mountain National Park in Colorado, a scenic climax of the Rocky Mountains, you are literally at the top of the continent. Within its 405 square miles are more than sixty-five peaks which scrape the skies at an altitude of 10,000 feet or more above sea level. Its loftiest pinnacle, Long's Peak, is 14,255 feet high. Between the sky-cleaving peaks lie numerous alpine valleys, remarkable for their profusion of gorgeously colored wild flowers and their wind-swept timberline forests bordering on glaciers and crystal lakes. The timberline in this park is extremely interesting. The icy winter winds make it impossible for trees to grow tall, and they lie flat on the ground like vines. In summer the colorful mountains are bathed by the dazzling sunshine which makes days comfortable even when storms play about the higher peaks.

Rocky Mountain National Park is accessible the year round by fine highways which reach Estes Park, the principal settlement near the eastern park boundary. The serpentine Trail Ridge Road crosses the park to Grand Lake, connecting the east and west sides. A four-mile stretch of this scenic highway at the top of the Rockies is 12,000 feet or more above sea level, probably the highest stretch of motor road in the world. The trail system of the park is one of the best that the National Park Service has built, and

thousands of riders and hikers enjoy its beauties and thrills each summer. Over 1,500 saddle horses are used in Rocky Mountain Park during the vacation season. The park is open the year round, but it is accessible in winter only to experienced mountaineers accustomed to snowshoes and skis. In summer the park is available from June to October for everybody.

THE PARKS OF THE SOUTHWEST

GRAND CANYON NATIONAL PARK

The Grand Canyon of Arizona has been likened to "a mountain upside down." It is literally that. The high spots in this national park are the rims of the canyon, the starting points. The south rim is 7,000 feet high and the north rim a thousand or so feet higher. From these spectacular cliffs, trails drop abruptly down the colorful walls to the Colorado River. Phantom Ranch, the picturesque lodge at the junction of Bright Angel Canyon and the Colorado River, is more than a mile below the lodge on the north rim.

Erosion is often called the master builder, and the Grand Canyon of the Colorado is its undisputed masterpiece. The canyon itself is a series of colossal monuments, suggesting oriental temples, carved through the ages by the turbulent river, aided and abetted by wind, rain, snow, and ice. Between lies a sea of pastel colors. The magnitude and magnificence of the scene defies description.

In Havasu Canyon lives the tribe of Indians less touched by civilization than any other aborigines in this country. Kaibab Forest, which extends to the very brink of the North Rim, is the largest unbroken timber area in the land.

In the side canyons of the North Rim are ruins of ancient cliff dwellings. East of El Tovar on the South Rim lies the Painted Desert and the Petrified Forest. This is the land of the Navajos and the Hopis, whose colorful blankets, pottery, and other handicraft lure many travelers on unique and unexpected shopping tours.

The South Rim of the Grand Canyon is accessible the year round by train and automobile, but the North Rim is snowbound in winter, the travel season being from May 15 to October 15.

ZION AND BRYCE CANYON NATIONAL PARKS

Zion and Bryce Canyon National Parks lie in southern Utah where the Prismatic Plains slip under the Pink and Vermilion Cliffs, where the Hurricane Fault, one of the largest visible cracks in the crust of the earth, bears evidence of some ancient cataclysm which occurred when this colorful land was rising slowly from a forgotten sea.

Zion Canyon is a long, narrow, verdant valley. Its walls rise abruptly in sheer cliffs from one to two thousand feet above its floor. The Cliffs are tinted in layers of soft reds, pinks, and creams, with here and there a golden yellow. At the upper end of the Canyon, the cliffs are so close together that the rim of one overhangs the base of another. Here are surprising exhibits of flying buttresses, hanging gardens, and patches of water flowers surrounding springs which burst from out of the desert walls.

In Zion Canyon, you are down in the valley looking up at the cliffs, the tops of which are reached by devious trails. In Bryce Canyon, on the other hand, you gaze from the rim down upon an amphitheater filled, like a vast sculptor's

studio, with thousands of castles, spires, minarets, and delicate formations carved mainly by the winds and the rains. The effect of this dazzling color spectacle is enhanced by the approach through a quiet pine forest.

Sitting at any of the dozen vantage points as the sun shifts its lights and shadows, you can discover in this fairyland the model of anything from Henry Ford in his Model T flivver to a remarkable likeness of Queen Victoria. At times when the sun's rays are slanted, it seems as if a mythical metropolis in which thousands of windows glow with illumination lies before you.

Throughout southern Utah, there are stupendous, many-hued natural formations. Near the parks are old Mormon villages isolated from the world, their inhabitants still living in the simplicity of pioneer days. These villages are outposts of Brigham Young's empire, hardly touched by modern progress.

CARLSBAD CAVERNS NATIONAL PARK

The Carlsbad Caverns are a series of enormous underground passageways extending under the Guadalupe Mountains in southeastern New Mexico. Already more than 30 miles of passages and caves have been explored on three different levels, and each year new chambers are discovered. How far the caverns reach no one knows as yet. They abound in strange and colorful formations. Some of them are beautiful in design; others approach the grotesque.

One of the astonishing features of this park is Bat Cave, from which at dusk each evening bats pour forth steadily for three hours or more. They emerge through a large natural opening in such enormous numbers that they resemble

dense smoke from a chimney. After a night out, the bats return near daybreak, and, with incredible swiftness, they fold their wings in mid-air and dart back into their underground home. Bats do not inhabit the caverns visited by the traveling public we are happy to say.

Carlsbad National Park covers an area of 45,526 acres around the entrance to the caves. The strange cacti and other desert plants make this area especially interesting, particularly to Easterners. It is a park that may be visited throughout the year. Inside the caves the temperature remains stationary at 56 degrees while outside it runs a gamut from zero in winter to 100 in the shade in summer. The principal caves, such as the King's Palace, the Queen's Chamber, the Green Lake room, and other amazing halls (several of them among the largest underground chambers in the world), are electrically lighted to bring out the gleaming color in the formations.

The trip through the caverns requires about six or seven hours, and you have your lunch on your way in one of the most unique eating places in the world. Single-lift elevators, second only in height to those in the Empire State Building in New York, carry supplies and passengers from the surface to the caverns, a distance of 750 feet.

MESA VERDE NATIONAL PARK

Mesa Verde National Park lies in southern Colorado and was created to preserve the relics of a very high form of prehistoric American civilization. Here are a series of pit houses, pueblos, and cliff dwellings nestled in the caves and crevices of the rocky canyons that cut the mesa from north to south. The Indians who built and lived in these ancient

dwelling have disappeared entirely. About 1300 A. D. drought and crop failures forced the people to abandon the Mesa Verde. They drifted toward the Rio Grande River where today you may see the Pueblo Indians in whose veins flow the blood of these ancient cliff dwellers. The most famous of these structures in the prehistoric cliff cities is Cliff Palace, which is the remains of a village with 200 rooms for family living and 22 sacred rooms, or kivas, for worship. Another is the Spruce Tree House, a village that sheltered 350 inhabitants.

The cliff dwellings are not the only attractions of Mesa Verde. The natural beauties of the "Green Mesa," so named because of its covering of juniper and piñon trees, are many, particularly in the summer after the spring rains have brought the flowers to full bloom.

BIG BEND NATIONAL PARK

Lying along the area where the Rio Grande River makes its abrupt turn northward is the newest of the national parks, Big Bend, comprising a total acreage of 691,338—all of it in the state of Texas. It is directly on the international boundary between the United States and Mexico and will be joined some day with a similar park on the Mexican side, thus forming a truly international park which will symbolize the friendship between our nation and its southern neighbor.

Big Bend National Park is roughly in the shape of a triangle with two of the three sides being the Rio Grande River. In the vast, nearly untouched desert region of the interior triangle are three major canyons, Santa Elena, Mariscal, and Boquillas. Towering above the chiseled gorges

are the Chisos Mountains, among the highest ranges of the Southwest. Wild life and plant life are plentiful and of great variety. This large park is to be kept as near a natural wilderness as possible, so that visitors may always have a glimpse of a desert land unchanged by modern civilization.

THE PARKS OF CENTRAL UNITED STATES

ISLE ROYALE NATIONAL PARK

Isle Royale National Park lies in Michigan and includes 133,838 acres, comprising one of the few remaining wilderness areas of the country. The park encompasses Isle Royale, the largest island in Lake Superior, and its neighboring islands which form a small archipelago. Here may be found interesting geological formations—rocky beaches, caves, and cascades—and also exceptional flowers and trees preserved from civilization's destruction. There are many beautiful lakes on Isle Royale, the largest being Siskiwit with an area of six square miles. Historical sidelights, such as the copper pits of 800 years ago, old American fur-trading posts, and nineteenth-century mines, add to the interesting visits that can be made on lovely Isle Royale. Excellent fishing and hiking may be enjoyed in this park, which is open the year round.

WIND CAVE NATIONAL PARK

Wind Cave National Park is in the Black Hills of South Dakota and embraces an area of 11,718 acres. It was formed to protect a remarkable limestone cavern which includes a series of rooms and corridors of amazing variety, an under-

world that looks, someone has said, as though it were made of sponges. The numerous caves are formed by walls composed of limestone eroded into delicate frostwork. Originally Wind Cave had no visible entrance and was discovered by hunters attracted to a small hole in a rock formation by weird whistling noises made by wind escaping from the caverns.

PLATT NATIONAL PARK

Platt National Park is located in southern Oklahoma and was created to hold for public use a number of sulphur and other mineral springs said to possess healing properties. The springs include both hot and cold waters, and the park is a favorite with campers. It covers a territory of little more than a square mile.

HOT SPRINGS NATIONAL PARK

Hot Springs National Park was not designated as a park until 1921, but it was set aside by the Federal Government in 1832, almost three decades before the national park idea was inspired by the exploration of the Yellowstone region. Certain areas containing springs were set aside for public use because the region was renowned, even among the Indians, for the healing qualities of its warm waters. There are 47 hot springs included in the park area. Surrounding them has grown up the attractive and prosperous little city of Hot Springs, the only city surrounded by a national park. Analysis of the waters shows them to possess mineral qualities comparable to the famous European spas. The park is, of course, open all year.

THE PARKS OF THE EASTERN STATES

ACADIA NATIONAL PARK

Acadia National Park, lying on the coast of Maine at the mouth of Penobscot Bay, occupies the major part of Mount Desert Island and also an area on the mainland near by. It is a region of rugged granite mountains, bays, woods, and lakes renowned for the wildness of their beauty. Mount Desert Island was discovered in 1604 by the great French navigator, Champlain.

Acadia is a unique park in several ways, particularly its marine aspects. In addition, it is a territory which for a century was in private hands and which has been ceded to the Government piece by piece by public-spirited men and women who have rescued it from exploitation. The park now embraces more than 44 square miles and includes a fine variety of plant life. The scenic highway to the top of Cadillac Mountain, the highest point in our Atlantic sea-coast, affords splendid marine views. The park is open all year, but the summer season is from June 15 to October 15.

SHENANDOAH NATIONAL PARK

Shenandoah National Park comprises 193,472 acres and extends for 75 miles in a narrow strip along the great crest of the Blue Ridge from Front Royal on the northeast to the vicinity of Waynesboro on the southeast. The Blue Ridge Mountains reach their scenic climax with many peaks nearly 4,000 feet high. Forest lands, high ranges, deep gorges, waterfalls and wildflower gardens stretch along the 97-mile scenic highway, a section of the Blue Ridge Park-

way linking the park with the Great Smoky Mountains National Park.

The park is only 60 miles from Washington, D. C. and overlooks the famous Shenandoah Valley. In it was President Hoover's mountain camp near the headwaters of the Rapidan River.

A magnificent system of bridle paths and foot trails, including a section of the famous Appalachian Trail, invites riders and hikers to explore this verdant wilderness.

MAMMOTH CAVE NATIONAL PARK

Mammoth Cave National Park occupies 51,244 acres in the state of Kentucky and is one of the most spectacular areas in the park system. The caves were accidentally discovered in 1799, and there are now more than 150 miles of underground passages explored, an unknown number of miles unexplored. Echo River, in whose waters live eyeless fish, winds through the old portion of the cave, 360 feet below the surface land. Visitors may go boating on the river as well as on the underground Crystal Lake. There are several trips which may be made separately, but the visitor may make a complete trip which takes seven and a half hours with lunch being eaten underground at the Snowball Dining Room. Mammoth Cave is a continuous series of beautiful rooms, passages, and halls—each one well worth a trip to this extraordinary national park.

GREAT SMOKY MOUNTAINS NATIONAL PARK

The Great Smoky Mountains National Park is located in North Carolina and Tennessee in the heart of the Ap-

palachian Range. The Great Smoky Mountains are the most massive uplift in the eastern part of the United States. They run the entire length of the park, covered with dense forests of spruce, balsam, hemlock, and beech and other trees in great variety. The mountain streams are perfect for trout and bass. The wild game in this park has suffered from decades of hunting, but, since it has been protected, the birds and animals are coming back. The wildness of this region protected it from civilization, and here you may see the forests as they were when our forefathers discovered the country and the entire Atlantic seaboard presented a similar appearance. The Cherokee Indian Reservation is immediately south of the park.

The territory of the park consists of about 460,000 acres. This great mountain recreational area near large centers of population is a gift to the people of the nation by North Carolina and Tennessee and Mr. John D. Rockefeller, Jr., in memory of his mother, Laura Spelman Rockefeller. The park lands have cost about \$10,000,000, one half of which was made available by the two states and one half by Mr. Rockefeller.

THE PARKS OF THE TERRITORIES

MOUNT MCKINLEY NATIONAL PARK

The Territory of Alaska has made an outstanding contribution to the national park system. Mount McKinley rises like a two-headed monster, 20,300 feet above the sea, the loftiest peak on the North American continent. It soars 17,000 feet sheer above the surrounding forested plateau, one of two mountains in the world to rise so high from its

own base. The park is an outstanding wild game preserve; it is the natural home of the caribou and the enormous tundra brown and Toklat grizzly, among the largest and fiercest of all bears. It is also the home of the moose, the beautiful white Dall sheep, a species of the Big Horn, and numerous other animals.

Because it is so far north and snowbound in winter, the season at Mount McKinley is short, from June 10 to September 15. The park is reached by train which connects with steamers at Cordova and Seward. This is a splendid country for saddle horse trips. It is second in size in the park system, having an area of more than 3,000 square miles.

HAWAII NATIONAL PARK

Hawaii National Park is really two separate parks on different islands. One, on the island of Hawaii, has for its principal attractions two living volcanoes, Kilauea and Mauna Loa. The other, on the island of Maui, is an example of a sleeping volcano. The most spectacular of the three volcanoes is Kilauea, which is renowned for its lake of fire. In the middle of a plateau 4,000 feet high, Kilauea boils its lava in a pit with vertical sides. Occasionally lava geysers spout 150 feet in the air. At other times the lake simply boils, a seething mass of fire. Mauna Loa is known as the "ghost of living volcanoes." It soars 13,680 feet and is active every few years. Its slopes are covered with forests of mahogany and tangles of giant fern trees. Haleakala has been inactive for centuries, but its summit is a crater of great size and beauty, eight miles long and three miles wide. The surrounding walls rise 2,000 feet above the floor of the



crater which is now quiet. The steam escapes from vents in the side of the mountain which rises nearly two miles above the sea.

Haleakala and Kilauea are reached by car over good roads, winding through marvelous tropical plant growth, including giant fern trees as high as houses, mahogany forests, and other fascinating tropical trees, an abundance of wild flowers, and flocks of gaily colored birds.

II. NATIONAL HISTORICAL PARKS

THIS division of the National Park Service contains only four historical reservations with two additional ones to be included soon. These National Historical Parks are outstanding, both in importance to the nation, and also in numbers of visitors to them. Colonial National Historical Park is visited yearly by nearly a half million people. Abraham Lincoln, Chalmette, and Morristown parks nearly equal Colonial in visitors.

Authorized, but as yet not established, are two very famous areas, Cumberland Gap and Saratoga—scenes of some of the greatest history-making events in the United States. These two parks will be truly fitting additions to the great historical parks already existing.

Abraham Lincoln, Kentucky—Site of the birthplace of Abraham Lincoln. The traditional log cabin in which the great President is supposed to have been born is placed within a lovely memorial building. This memorial is either on, or near, the spot of the actual birthplace of Lincoln.

Chalmette, Louisiana—Preserves part of the ground on which the Battle of New Orleans was fought. Here General Andrew Jackson gained great fame by leading his American troops to victory over the British in the last battle of the War of 1812, a struggle which was fought after the peace treaty was signed. The Treaty of Ghent had been signed fully two weeks before the battle, but news took a long time to travel from Europe to the United States, and it did not come in time to stop the struggle at New Orleans. Also included in the park is the Chalmette National Ceme-

tery where Federal soldiers of the War between the States and also veterans of later wars are buried.

Colonial, Virginia—This park includes many different historical projects and sites. There is the greater part of Jamestown Island, site of the first permanent settlement by English people in America. A few miles away stands Yorktown. Here the park embraces the battlefield and surrender site where Cornwallis capitulated to Washington, thus ending the Revolutionary War. Also at Yorktown are several restored houses and buildings contemporary with the 1781 historic events. A parkway, the Colonial, connects these and other famous sites with Colonial Williamsburg.

Morristown, New Jersey—This area was a base hospital site throughout the Revolution and the main camp of the American armies in the winters of 1776-77 and 1779-80. General Washington spent nearly a year at Morristown, and the Ford House (where he and Mrs. Washington lived one winter) is said to contain more historical relics associated with our First President than any other single building in America.

III. NATIONAL MONUMENTS

PRIOR to President Franklin D. Roosevelt's reorganization order of June 10, 1933, the National Park Service had supervision of about forty national monuments, none of which were in national forests or military reservations. Sixteen national monuments administered by the Forest Service of the Department of Agriculture and eleven by the War Department were transferred by the Executive Order and consolidated in a complete system under the control and protection of the National Park Service. There are now eighty-five national monuments.

National monuments are set aside by order of the President of the United States under the Act of Congress of June 8, 1906, which is known as the "Antiquities Act." It authorizes the Chief Executive to "declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic and scientific interest that are situated upon lands owned or controlled by the Government of the United States to be national monuments." It sometimes happens, as in the cases of Acadia, Lassen, Grand Canyon, Zion, Bryce, and Carlsbad Caverns National Parks, that Congress changes their status from that of monuments to the grade of parks.

The term "national monument" is admittedly confusing, particularly to people who do not live near these reservations. For instance, visitors might stop at some monument, a great memorial shaft, and go on their way, thinking that they have seen the National Monument which might embrace 4,000 acres or more. It would be a fine thing if a

better name could be found for this extremely important group of national park reservations, and we think, too, that this large group will bear some classification of its units. We feel so strongly on this point that we are presenting here our notes on each unit of the system under headings that appropriately characterize the features of these tremendously interesting and valuable areas; and we have used for our headings the names of the sciences that are chiefly concerned with the natural features or outstanding objects of the respective monuments. Archaeology comes first because the National Monuments Act was passed in 1906 to speed the salvation of prehistoric structures and ancient missions in the Southwest.

ARCHAEOLOGY

Aztec Ruins, New Mexico—Includes a large group of strikingly well-preserved ruins of ancient pueblos, containing approximately 800 rooms. Relics indicate that its inhabitants were ancestors of the modern Pueblo Indians although they bore no relation to the Aztecs after whom the ruins were named. There are numerous unexplored areas in this national monument.

Bandelier, New Mexico—Large numbers of cliff-dwelling and pueblo ruins of unusual interest. Entire prehistoric villages may be seen here complete to restored tools, implements, and household equipment.

Canyon de Chelly, Arizona—A beautiful 20-mile box canyon, joined by a lateral canyon, with walls of red sandstone from 700 to 1,000 feet high and cliff dwellings in caves and crevasses.

Casa Grande, Arizona—Discovered in 1694, preserves

the "Great House," a prehistoric pueblo, and the ruins of a group of Indian villages which are dominated by a four-story watchtower, the last of its kind.

Chaco Canyon, New Mexico—Cliff dwellings set in a deeply eroded valley between soaring, vertical cliffs. One of the most imposing group of ancient ruins in America is Pueblo Bonita, a huge semi-circular structure originally five stories high and housing 1,300 people, found in this national monument.

Gila Cliff Dwellings, New Mexico—Four natural cavities in the face of an overhanging cliff 150 feet high. These dwellings are divided into small rooms by walls built of adobe and stone, and they are in an excellent state of preservation.

Gran Quivira, New Mexico—Ruins of seventeenth-century Spanish Mission buildings and of eighteen Indian pueblos.

Hovenweep, Utah—Colorado—Preserves four groups of towers, pueblos, and cliff-dwellings built by the ancient Mesa Verde Indians.

Montezuma Castle, Arizona—A remarkable cliff dwelling in the face of a vertical cliff. The five-story, twenty-room castle accommodated about 300 people and is a splendid example of the prodigious energy expended by prehistoric tribes. These buildings are 90 per cent intact and original.

Mound City Group, Ohio—Famous group of prehistoric mounds, containing buried Indian habitations and artifacts.

Navajo, Arizona—Ruins of prehistoric dwellings built in natural caves, one of which is 450 feet long and 150 feet wide.

Ocmulgee, Georgia—A location where prehistoric and

historic cultures meet and merge. It shows the evolution from prehistoric mounds and towns through the early Spanish and English Colonial eras of Indian trade.

Tonto, Arizona—Two cliff-dweller ruins with supporting beams and lintels of windows and low doors still in place. These were occupied during the fourteenth century by Indians who farmed the Salt River Valley.

Tuzigoot, Arizona—Ruins of a prehistoric pueblo which was at its height between 1000 and 1400 A. D. There are buildings which are an outstanding example of the later period of ancient pueblos of the Verde Valley.

Walnut Canyon, Arizona—Extremely interesting cliff dwellings of from 6 to 8 rooms, apparently built for separate families rather than for the communal type usually found. Projecting limestone ledges used as foundations.

Wupatki, Arizona—Ruins of prehistoric dwellings, constructed by the ancestors of the Hopi Indians and carved out of red sandstone.

Yucca House, Colorado—The ruins of an ancient Indian house of great size, set in a picturesque garden of yuccas on a slope of the Sleeping Ute, a mountain resembling a sleeping Indian.

HISTORY

Ackia Battleground, Mississippi—Site of the Battle of Ackia, in which the Chickasaws, allied with British troops, repulsed an attack by the French and their Choctaw allies on May 26, 1736.

Andrew Johnson, Tennessee—Location of President Andrew Johnson's home, tailor shop, and grave.

Appomattox Court House, Virginia—Scene of the con-

clusion of the Civil War by the surrender on April 9, 1865, of General Robert E. Lee, Confederate Army, to General Ulysses S. Grant, Federal Army.

Big Hole Battlefield, Montana—Site of the important battle where Chief Joseph and his Nez Percé Indians were defeated by a smaller force of United States troops on August 9, 1877.

Cabrillo, California—Point of land near San Diego Bay first sighted by Juan Rodriguez Cabrillo on September 18, 1542.

Castillo de San Marcos, Florida—The oldest masonry fort in the United States whose construction was started in 1672 by the Spanish to protect St. Augustine, the first permanent settlement of white people in this country.

Castle Pinckney, South Carolina—A fortification built in 1810 to replace a revolutionary fort. It was part of the early defenses of Charleston Harbor.

El Morro, New Mexico—Sandstone rock eroded in the shape of a castle on which are hundreds of inscriptions of early Spanish explorers and early American emigrants. There are also ancient Indian cliff-dweller ruins.

Father Millet Cross, New York—At Fort Niagara. Site where Father Pierre Millet, seventeenth-century missionary to the Indians, erected a cross in 1688. The fort situated here figured prominently in the French and Indian War and also in the War of 1812.

Fort Frederica, Georgia—Oglethorpe, the leader of colonization in Georgia, built this fort in 1736 as an English defense against Spain.

Fort Jefferson, Florida—Site of the largest of all masonry fortifications in the western world. It was built in 1846 for control of the Florida Straits and was a military prison dur-

ing the Civil War. It is an outstanding bird refuge.

Fort Laramie, Wyoming—Remains of an old fort, built in 1834, that housed the U. S. Army forces whose duty it was to protect the pioneers traveling over the Oregon Trail to the newly opened West. Here also protection and supplies were given to the Mormons, the forty-niners hunting for gold in California, and many others. It was also a base of operations from which attacks were launched against the Indians.

Fort Matanzas, Florida—Located on Rattlesnake Island, it is a fort built by the Spaniards in 1737 to protect St. Augustine. In the eighteenth century many battles and sieges took place here as the Spanish fought rival nations for the possession of Florida.

Fort McHenry, Maryland—A fort in the shape of a five-pointed star which was the scene of many historic events. It is especially famous for the British bombardment of September 13-14, 1814, which inspired Francis Scott Key to write his immortal poem, "The Star Spangled Banner," which was later to become our national anthem.

Fort Pulaski, Georgia—Constructed from 1829 to 1847, this structure is a splendid example of a massive masonry fort. It was the scene of a siege in 1863 when Union troops seized it from the Confederates and thus proved that the new cannons had made masonry forts useless.

George Washington Birthplace, Virginia—Rebuilt estate named Wakefield where our first president was born. Home contains authentic period furniture and decorations. Beautiful Colonial gardens surround it. Family burial plot is on the grounds.

Homestead, Nebraska—Site of the first claim under the Homestead Act of 1862, originally owned by Daniel Free-

man. This marked the beginning of "homesteading" or free land development. The United States government gave away to settlers during the next sixty years an acreage nearly equal to that of the combined states of Texas and Louisiana.

Meriwether Lewis, Tennessee—Situated on Natchez Trace, it is the scene of the grave of Meriwether Lewis, a leader of the Lewis and Clark Expedition which explored the Northwest.

Old Kasaan, Alaska—Abandoned Haida Indian village where portions of the original framework of buildings remain. There are also totem poles, grave houses, and monuments.

Perry's Victory Memorial, Ohio—Commemoration of Commodore Perry's victory in the greatest naval battle of the War of 1812. It is also a memorial to a century of peace between the United States and Canada.

Pipe Spring, Arizona—Old stone fort erected in 1858 by Jacob Hamblin, famous Mormon scout, as an outpost against the Indians. There are also structures built by the Mormons between 1869 and 1870. A great spring here pours forth into the desert pure, cold water at the rate of a hundred thousand gallons a day.

Scotts Bluff, Nebraska—Landmark and campsite on the Oregon Trail. This great sandstone bluff is associated in history with the pioneer migrations between 1843 and 1869. Has scientific as well as historic interest.

Sitka, Alaska—Capital of Alaska during Russian ownership. It is an area of great natural beauty and also historic interest as the scene of a Russian massacre by Indians. Contains many old totem poles.

Statue of Liberty, New York—Gigantic statue, a gift

from France to the United States, erected on the foundations of an old star fort on Bedloe's Island in New York Harbor.

Tumacacori, Arizona—Ruins of a famous old mission constructed by the Papago Indians in 1691 under the direction of Father Kino.

Verendrye, North Dakota—Spectacular Crowhigh Butte, towering above the Missouri River from which the great French explorer, Verendrye, first gazed upon the territory beyond the Missouri.

Whitman, Washington—Site where Dr. Marcus Whitman and his wife attended the spiritual and physical needs of the Oregon Indians. They were killed by these same Indians in 1847. This spot is also famous as a landmark on the Oregon Trail.

GEOLOGY

Arches, Utah—Gigantic arches, natural bridges, windows, spires, balanced rocks, and other unique wind-worn formations of sandstone.

Badlands, South Dakota—Extremely interesting area of spectacularly eroded land, containing numerous prehistoric animal fossils. The scenery, geologic formations, and wild life are all outstanding.

Black Canyon of the Gunnison, Colorado—Miles of the most scenic section of the Black Canyon of the Gunnison River where the deep, narrow canyon and sheer rock walls expose interesting formations.

Capitol Reef, Utah—A sandstone cliff, twenty miles long, which bears a distinctly Gothic appearance with its buttresses, dome-shaped formations, and lower colorful strata.

Capulin Mountain, New Mexico—Magnificent cinder cone of a recently extinct volcano, rising 1,500 feet above the surrounding plain.

Cedar Breaks, Utah—A series of amphitheaters eroded to a depth of 2,000 feet in the pink cliff formation from which Zion and Bryce Canyon National Parks are formed. Cedar Breaks is an example of the first stages of erosion, Bryce Canyon the second stage, and Zion the third.

Chiricahua, Arizona—Wilderness of unusual rock formations: pillars, balanced rocks, and formations resembling faces and animals.

Colorado, Colorado—High monoliths, perpendicular-walled canyons, and grotesque formations, the work of erosion, all highly colored. Very scenic region overlooking the Colorado River.

Craters of the Moon, Idaho—A collection of weird formations left by volcanic activity resembling the moon when seen through a telescope. This area is at the foot of the White Kamb Mountains.

Death Valley, California-Nevada—The outstanding desert area in the United States, made famous by early pioneers and prospectors. Lowest point in the United States, 280 feet below sea level. From the mountains forming the eastern boundary can be seen Mount Whitney, the highest point in this country (United States proper). Weird natural formations, unusual plant and animal life, and brilliantly colored rocks can be seen.

Devil Postpile, California—Peculiar hexagonal basaltic columns like an immense pile of posts. The columns are piled at all angles, and the spectacle is said to rival the famous Giant's Causeway in Ireland.

Devils Tower, Wyoming—A natural rock tower, 1,280

feet high from the river bed or 865 feet from its base on the hilltop. This fluted shaft is of volcanic origin, lying in a beautiful natural setting of trees and bare spaces of red earth.

Glacier Bay, Alaska—Includes 3,593 square miles of rugged mountains and tidewater glaciers which, as they reach the ocean, tower higher than the masts of ships.

Grand Canyon, Arizona—Adjacent to the Grand Canyon National Park. It includes Toroweap Point, affording a view of the inner gorge of the Colorado River and recent lava dam.

Great Sand Dunes, Colorado—Some of the largest and highest sand dunes in this country. They lie in the western foothills of the Rockies and are noted for their color.

Holy Cross, Colorado—Two crevices on the side of Mount of the Holy Cross which, when filled or partially filled with snow, form a figure in the shape of a Greek cross.

Jackson Hole, Wyoming—Extraordinary geological formations due to glacial moraine deposits from the Teton Range which have been modified by erosion and given character and beauty by growth of native trees and shrubs. From all parts of the area there are magnificent views of the Tetons. An historical area because it was the scene of early explorer and trapper activity and a rendezvous for fur traders for years. Because of its great variety of wild life, notably moose, deer, and elk, and its flora it is also an outstanding biological monument.

Jewel Cave, South Dakota—Limestone caverns, consisting of a series of chambers connected by narrow passages with numerous side galleries.

Katmai, Alaska—Includes the famous "Valley of Ten Thousand Smokes" in which there are literally millions of

miniature volcanoes jetting steam so hot that explorers have cooked their meals over the vents. Contains nearly three million acres and is an outstanding game preserve, noted especially for Alaska brown bear.

Lava Beds, California—Unusual exhibit of volcanic action; lava beds filled with numerous large caves and tunnels, some of them filled with rivers of perpetual ice. Indian petroglyphs carved and painted on the walls indicate possible occupancy by early races. Battleground of the Modoc Indian war of 1873.

Lehman Caves, Nevada—Pearly gray and white limestone caves criss-crossed by tunnels and galleries of stalactite formations.

Natural Bridges, Utah—Three natural sandstone bridges of great size and beauty. Sipapu (locally known as Augusta) Bridge, the largest, has a span of 261 feet and rises 222 feet above the stream bed. Kachina (Caroline) Bridge has a span of 186 feet and a height of 205. The Owachomo (Edwin) Bridge, the smallest, spans 194 feet and rises 108 feet.

Oregon Caves, Oregon—Consist of limestone caverns with odd, grotesque, and fantastic formations located in an environment of great scenic beauty.

Pinnacles, California—Spires and domes rising to the height of 500 to 1,200 feet. There are also caves and subterranean passages in this extraordinary region. One of the few resorts of the almost extinct condor, the largest bird found on this continent.

Pipestone, Minnesota—Site of a quarry from which Indians obtained materials with which to make peace pipes used in their sacred ceremonies.

Rainbow Bridge, Utah—The greatest and most remark-

able natural bridge known to man. It spans 278 feet and rises 309 feet in its center, so high that the capitol building in Washington could stand beneath it without touching the bridge. Shaped in the perfect symmetry of a rainbow and colored a beautiful salmon pink.

Santa Rosa Island, Florida—A barrier reef of tremendous scientific and historic interest. It is forty-four miles long and from one-eighth to one-half mile wide.

Shoshone Caverns, Wyoming—A real story-book robbers' cave with a secret entrance high up on a mountain cliff, almost completely concealed by trees. Main cavern extends more than a half mile into the mountain with numerous side caverns.

Sunset Crater, Arizona—A volcanic crater, colored like that of a brilliant sunset, with lava flows and ice caves. Located near the famous San Francisco Peaks.

Timpanogos Cave, Utah—Limestone cavern measuring almost 600 feet in length and situated on the side of Mount Timpanogos.

Wheeler, Colorado—Extraordinary example of extinct volcano formations illustrating erratic erosion. Unusual combination of fantastic pinnacles and gorges.

White Sands, New Mexico—White sand dunes of almost pure gypsum. An area of outstanding scientific interest.

Zion, Utah—Colorful Kolob Canyon and the remarkable Hurricane Fault. Unusual examples of geologic formations.

BIOLOGY

Channel Islands, California—Includes Santa Barbara Islands and is a gathering place for sea lions. There are also

unusual plants, fossils, and mammals.

Dinosaur, Colorado-Utah—The greatest collection of fossil remains in the United States. The fossils of prehistoric reptiles are found in what was probably a sand bar—relics of the strange creatures that inhabited the earth in ancient times. One is a brontosaurus which measured 100 feet long and 20 feet high. A full-grown elephant standing beside this animal would appear as a dog standing by a horse.

Fossil Cycad, South Dakota—Extremely interesting fossil plant deposits. This area is near the Black Hills of South Dakota.

Joshua Tree, California—One of the few sites left of the rare and rapidly disappearing Joshua tree. Many other beautiful and varied desert flora grow here.

Muir Woods, California—An accessible grove of virgin California redwoods, *Sequoia sempervirens*, only seven miles from San Francisco.

Organ Pipe Cactus, Arizona—Only spot where one may see the Organ Pipe Cactus and other desert plants. Here also are traces of the old Spanish route, Camino del Diablo.

Petrified Forest, Arizona—Fossil remains of great trees which fell thousands of years ago. In some of these fallen forests, the silica which replaced the original fiber of the trees has assumed exceptionally brilliant colors. The ground is literally paved with chips of agate, onyx, carnelian, and jasper. Also includes finest part of the Painted Desert.

Saguaro, Arizona—Finest saguaro or giant cactus in the United States; also abounds in desert plants of many other species.

IV. NATIONAL MILITARY PARKS AND CEMETERIES

THESE park areas were all transferred to the National Park Service from the War Department by Executive Order of June 10, 1933. It is interesting to reflect a moment on the confusion that existed until recently in the designation and management of national park areas. For instance, the War Department had control of Gettysburg Battlefield as a military park while the National Park Service of the Department of the Interior had the Battlefield of Yorktown as a national monument; likewise, the War Department had supervision of Abraham Lincoln's Birthplace while the birthplace of George Washington was under the National Park Service. A third and entirely independent Federal park service had charge of the parks and memorials of Washington, D. C. and its environs, and this park bureau was directed by an Army officer.

In this group of military parks and cemeteries, there are included only those cemeteries which are closed to further burials or which lie in park territory. Others, including Arlington, remain under the War Department.

Chickamauga and Chattanooga, Georgia-Tennessee—Preserves areas where some of the bloodiest battles of the War between the States occurred. At Chickamauga, on September 19–20, 1863, the Federals under Rosecrans were decisively defeated by the Confederates led by Bragg. However, this great Southern victory was balanced by the Union triumph at nearby Chattanooga in mid-November, 1863. From this time on, the Federal forces held control of this

area. In this park are found the battlefields of Chickamauga, Orchard Knob, Lookout Mountain, and Missionary Ridge.

Fort Donelson, Tennessee—An important Confederate fortification on the Cumberland River which surrendered to General Grant after attacks by both land and water forces. Nearly 15,000 Confederates were captured, and the fall of Nashville and Columbus became inevitable. National Cemetery.

Fredericksburg and Spotsylvania, Virginia—Commemorates Civil War battles of Fredericksburg, Spotsylvania Court House, the Wilderness, and Chancellorsville. At the last-named place, General Stonewall Jackson met his tragic end, and the thirteen-day Battle of the Wilderness occurred when General Grant was making a determined effort to clear the way to Richmond, capital of the Confederate States. National Cemetery.

Gettysburg, Pennsylvania—Preserves the scene of the famous battle from which General Lee retreated on the night of July 3, 1863. This encounter drove the Southern forces out of Union territory and marked the turning point of the war. Both sides suffered heavy casualties in killed and wounded in the furious battles here. National Cemetery.

Guilford Courthouse, North Carolina—Scene of many maneuvers during the Revolution, participated in by Morgan, Greene, and Cornwallis. The battle fought on March 15, 1781, ended in a strategic victory for the Americans and forced Cornwallis to abandon the Carolinas. This marked the beginning of the end for the Revolutionary War.

Kings Mountain, South Carolina—This is where the

Battle of Kings Mountain was fought on October 7, 1780. The British commander, Colonel Ferguson, was killed with nearly 400 of his men, and twice that number were taken prisoners. The Americans lost their brilliant leader, Colonel James Williams, but they won a decisive victory over their enemies.

Moore's Creek, North Carolina—Memorable battle of the Revolution which was fought on February 27, 1776, as inspiring to the South as the Battle of Lexington had been to the North. Colonel Caswell with a thousand militia defeated 1,600 Loyalists, taking 900 prisoners, 2,000 stands of arms, and 15,500 pounds in gold.

Petersburg, Virginia—The struggle, centering around Petersburg in 1864 and 1865 and lasting for ten months, was one of the most celebrated sieges of the War between the States. Gradually Grant had forced Lee southward until the Confederates lay posted about Richmond and Petersburg. Grant's entire following numbered about 120,000, while Lee was at the head of approximately 70,000. The siege, in which Smith, Hill, Hancock, Wright, and Sheridan took part, was the longest one in the history of United States military operations.

* *Richmond, Virginia*—Area encompasses the scenes of many battles which were fought during almost every year of the War between the States. Here are portions of the battlefields of Cold Harbor, Seven Pines, Fort Harrison, and Malvern Hill. Cold Harbor was one of the worst defeats suffered by the Federals in Virginia while the Battle of Fort Harrison (or Chaffin's Farm) paved the way for General Butler's Union troops to march into Richmond.

Shiloh, Tennessee—Beautiful scenic area, embracing the

* Official National Park Service designation is Richmond National Battlefield Park.

Shiloh battlefield near Pittsburg Landing, where the most important of the western battles was fought during the War between the States. This battle was fought in 1862 with severe losses on both sides. National Cemetery.

Stones River, Tennessee—Scene of severe fighting around Murfreesboro during 1862 and 1863. Both sides occupied strong positions along the river. The Confederates under Bragg were finally driven out by Rosecrans in June, 1863. National Cemetery.

Vicksburg, Mississippi—Area of great scenic beauty and scene of important events in the battle and siege of Vicksburg. After a siege of forty-seven days, the Confederate leader, Pemberton, surrendered to Grant. This Union victory gave the North control of the Mississippi River and cut the Confederacy in half. National Cemetery.

In addition to the National Cemeteries previously indicated, the National Park Service also administers the Antietam National Cemetery in Maryland, the Poplar Grove National Cemetery in Virginia, and the Yorktown National Cemetery in Virginia. Special mention should be made of the two remaining National Cemeteries. Battle-ground National Cemetery in the District of Columbia contains the graves of 44 men who were killed during General Jubal A. Early's surprise attack on the nation's capital on July 11, 1864. Custer Battlefield National Cemetery in Montana is on the site of the Battle of the Little Bighorn River. During this battle on June 25, 1876, Lt. Col. George A. Custer and his 226 men were annihilated by the Sioux Indians.

V. NATIONAL BATTLEFIELD SITES

THIS group of park lands includes miscellaneous battlefield sites of two wars. They may remain in this category, which may prove to be a temporary designation, or they may be distributed to the military park, the national monument, or other appropriate groups. For instance, the White Plains site might go to the State of New York or to Westchester County because it is a very small area, obviously a feature for local administration.

On the other hand, a site as important as Antietam Battlefield might be assigned rank as a military park and take its place with other great historic areas of the War between the States.

Should the category be retained it might ultimately include an exceptionally interesting historic area in Georgia. It is the remains of the fortifications of the Andersonville concentration camp for Northern prisoners of war, which was a huge compound enclosed by high stockades. The stockades are gone but many features of this prison site remain, including a large military cemetery, all under the jurisdiction of the War Department.

Antietam, Maryland—Where General McClellan met General Lee in the Battle of Antietam or Sharpsburg, which took place on September 16, 1862. The Army of the Potomac lost nearly 12,000 men of the 46,000 engaged, and the Army of Northern Virginia had killed about 8,000 of their 31,200 men.

Brices Cross Roads, Mississippi—Commemorates Civil War battle fought there on June 10, 1864.

Cowpens, South Carolina—Scene of Tarleton's defeat on January 17, 1781, by General Daniel Morgan and his American troops.

Fort Necessity, Pennsylvania—A rude fort was erected here by George Washington when advancing from Great Meadows toward Fort Duquesne in 1754. He had about 300 men, and the French attacked him with a force of 500, including some Indians. The fight raged intermittently for nine hours, and the garrison capitulated, Washington surrendering the prisoners taken at Great Meadows and being permitted to retreat unmolested.

Kennesaw Mountain, Georgia—Position held by General Johnston with 60,000 Confederates against Sherman and his 100,000 Federals from June 11 to July 1, 1864. Then Johnston was forced to retire after several heavy engagements had been fought. The Confederate general, Polk, was killed here on June 14.

Tupelo, Mississippi—Commemorates the Battle of Tupelo which occurred during the War between the States on July 13-14, 1864.

White Plains, New York—Where George Washington concentrated his forces, and, in the battle fought on October 28, 1776, repulsed a British attack led by General Howe. Area preserved very small.

VI. NATIONAL HISTORIC SITES

THIS group of park reservations is another one made up of historic sites, structures, and battlefields. It may perhaps be a bit confusing to the reader when he discovers the likeness of some of these areas to others in a different division. For instance, Manassas National Battlefield Park, listed as a National Historic Site, is the same type and even has the same title as Richmond National Battlefield Park, and yet the latter is under the division of Battlefield Parks. However, as has been mentioned before, these discrepancies are slowly being taken care of and eventually the National Park Service will solve these problems of naming.

Atlanta Campaign Markers, Georgia—Traces Sherman's march from Chattanooga to Atlanta, prelude to his famous "March to the Sea." This campaign resulted in the Confederacy being divided into three separate sections.

Federal Hall Memorial, New York—On this site stood Federal Hall, the first seat of government for the newly created United States. It was the scene of many historic events during the early days of the republic. This area is now occupied by the Federal Subtreasury Building.

Fort Raleigh, North Carolina—Encompasses 16 acres of land on Roanoke Island. Here the first attempted settlement by the British in the United States was made in 1585-87. After the abandonment of this venture, Sir Walter Raleigh sponsored a new settlement in 1587. This was later known as the "Lost Colony" because of the fact that when English ships returned to the island in 1591, no trace was found of the hundred-odd settlers—and no trace was ever

found. Among those lost was a baby, Virginia Dare, the first child of English parentage to be born in America.

Home of Franklin D. Roosevelt, New York—Deeded to the Government by the late President, this Hudson River estate is an example of the architecture, the life, and the times of an era which has almost vanished. Here Franklin D. Roosevelt was born, grew up, returned for visits when he was in public life, and now is buried in the garden. Also included in the Hyde Park site is the Roosevelt Memorial Library.

Hopewell Village, Pennsylvania—An abandoned eighteenth and early nineteenth-century iron-making village. This area includes ruins of the old blast furnace as well as many subsidiary buildings. The National Park Service plans to rehabilitate and restore this village, so that people can see life in a small industrial center during the past century.

Jefferson National Expansion Memorial, Missouri—A site set aside in St. Louis to commemorate the territorial expansion of the United States as well as the famous people and events connected with the growth of our country.

Manassas National Battlefield Park, Virginia—1,604 acres of land containing the sites of two of the most famous battles of the War between the States. The first battle, more commonly known as "Bull Run," was fought on July 21, 1861, and ended with the Confederates under Johnston and Beauregard delivering a decisive defeat to the Federal troops under McDowell. It was at this battle that General Jackson received his nickname of "Stonewall." On August 29-30, 1862, the Second Battle of Manassas was fought. It, too, was a complete defeat for the Union forces, and the result was that Lee made his first penetration of Northern territory which culminated in the Battle of Antietam.

Old Philadelphia Custom House, Pennsylvania—This building was completed in 1824 and is a beautiful example of Greek revival architecture. Its fame lies in the historic controversy between President Andrew Jackson and the Whigs over national banking questions. The building was, at that time, the Second Bank of the United States.

Salem Maritime, Massachusetts—A site which comprises a number of wharves and buildings, the remains of the era when Salem was one of the greatest ports on the Atlantic Coast. Salem was founded in 1626, reached its height before the Revolution, served the American cause faithfully as one of the few ports which remained open throughout the Revolution, and finally began to decline as a result of the War of 1812. Many interesting examples of early American architecture may be seen in this historic site.

Vanderbilt Mansion, New York—This mansion exemplifies the economic, social, and cultural history of a wealthy family of the late nineteenth century. It was the home of Frederick W. Vanderbilt, completed in 1898, as well as the beautiful grounds which surround it. The house is completely furnished with elegant period furniture.

VII. NATIONAL MEMORIALS

HERE again we have a category of national reservations which may ultimately be broken up by assignment of the various areas to other groups, such as national monuments or national historic sites. For convenient reference, the National Memorials which are in or near the District of Columbia park system are described in Section VIII, which immediately follows this group.

Camp Blount Tablets, Tennessee—These tablets mark the site where General Andrew Jackson mobilized for a war against the Spanish and Indians in Florida.

House Where Lincoln Died, Washington, D. C.—See Section VIII.

Kill Devil Hill, North Carolina—Scene of the famous first sustained flight by a heavier-than-air-machine, accomplished by Wilbur and Orville Wright.

Lee Mansion, Virginia—Originally the home of George Washington Parke Custis, the grandson of Martha Washington. It later became the home of General Robert E. Lee when he married the daughter of Custis. It was used as a Union hospital during the War between the States. It is surrounded by Arlington National Cemetery.

Lincoln Memorial, Washington, D. C.—See Section VIII.

Lincoln Museum, Washington, D. C.—See Section VIII.

Mount Rushmore, South Dakota—Gigantic figures chiseled on the face of Mount Rushmore. Four great Presidents of the United States have their features carved in the stone—George Washington, Thomas Jefferson, Abraham Lincoln, and Theodore Roosevelt.

New Echota Marker, Georgia—Site of the ancient Cherokee Indian capital.

Thomas Jefferson Memorial, Washington, D. C.—See Section VIII.

Washington Monument, Washington, D. C.—See Section VIII.

VIII. DISTRICT OF COLUMBIA PARKS AND HISTORIC SITES

THE Federal parks in the District of Columbia represent the oldest park system in national ownership in the United States; they belong to the people of the nation just as Yellowstone and Yosemite do. Adequate park space was included in the original city of Washington as planned by Charles Pierre L'Enfant and authorized by Congress in 1790. Under this authorization, George Washington purchased seventeen parcels of land for park purposes. The Mall, the Capitol Grounds, and the President's Park on which the White House was built were acquired in this way.

The original streets for Washington were donated by the landowners and were so wide that parks, circles, and triangles could be created at intersections. This is how the national capital came into possession of such beautiful little parks as Stanton, Farragut, and McPherson, and also its famous circles, such as Scott, Dupont, and Thomas Circles.

At the present time, there are 730 reservations included in the Washington park system, totaling approximately 27,790 acres. Many of them are, of course, extremely small, but others, such as Rock Creek Park and the Potomac Park group, are extensive and widely used for recreational purposes. The Washington park system is one of the most famous city park developments in the world, and it has played an important part in building up and sustaining Washington's reputation as one of the most beautiful of all capital cities.

The Mall—One of the world's most famous parkways,

the development of which, though in accordance with the plans of L'Enfant and the McMillan Commission of 1901, has really just begun. It includes the United States Army Medical Museum, the Smithsonian Institution, the Freer Art Galleries, the National Museum Buildings, the National Gallery of Art, and the Washington Monument. Along Constitution Avenue, on the north border of the Mall, are the buildings of the "Government triangle," housing the Departments of Commerce, Justice, Labor, and many others. The Department of Agriculture group is located on the southern side of the Mall.

The President's Park—The inner portion includes eighteen acres within the iron fence enclosing the White House and grounds proper. The outer portion, also known as "Grounds South of the Executive Mansion" and the "White Lot," contains 52 acres, including the Ellipse.

East and West Potomac Parks—West Potomac Park lies along the Potomac River below Georgetown and includes the Tidal Basin surrounded by the famous Japanese cherry trees, planted in 1912 by Mrs. William Howard Taft and the wife of the Japanese Ambassador at that time, Viscountess Chinda. East Potomac Park consists of 327 acres of land reclaimed through dredging the Washington Channel. Here are the Washington Rose Gardens, the three and one half mile speedway, affording views of historic Alexandria, Bolling Field, and the Anacostia Naval Air Station. The double-blossom Japanese cherry trees that bloom in East Potomac Park about two weeks after the Tidal Basin trees are widely acclaimed for their beauty. The Washington tourist camp, screened by careful planting, is located in East Potomac Park.

Rock Creek Park—This great city park of nearly 1,800

acres adjoins the National Zoological Park on the north. It contains golf courses, tennis courts, picnic groves, and more than 30 miles of bridle paths. When Congress authorized the establishment of this park in 1890, the year Yosemite, Sequoia, and General Grant National Parks were created, the legislation designated the area as "a pleasuring ground for the benefit and enjoyment of the people of the United States," the identical language used in the act which created Yellowstone.

Fort Stevens Park—An area of two and one half acres, dedicated to the memory of those who fought there on July 11 and 12, 1864, when the Federal capital was saved from capture by the Confederates under Jubal A. Early. On July 11 President Lincoln went to Fort Stevens to watch the battle and exposed himself to enemy fire. This is the only occasion on which a President of the United States was ever under fire from enemy guns while in office.

Meridian Hill Park—A unique park affording splendid panoramic views of the National Capital on Sixteenth Street, not far from the entrance to the National Zoological Park. Designed in the style of a French-Italian garden with high terraces and a great water cascade.

Lafayette Park—North of the President's Park; contains the Clark Mills statue of Andrew Jackson, probably the oldest equestrian statue cast in America, the statues of Lafayette, Rochambeau, von Steuben, and Kosciuszko. There are trees in this park gathered from every corner of the earth, and also domestic trees, including the magnificent American elms that border the square.

Anacostia Park—An area of nearly 300 acres bordering the Anacostia River in southeast Washington, developed through reclaiming the Anacostia flats. Three golf courses,

tennis courts, baseball diamonds, and football fields offer recreational opportunities to thousands, and a major landscape feature is the planting of crab apple trees along the seawall. These young trees bloom in May and June. When they mature, they will afford a spring flower spectacle of first magnitude. The National Memorial Grove is a group of trees from traditionally historical places.

Other Parks—There are many other famous parks in Washington and its environs. Fort Dupont, Franklin, and Lincoln Parks are known to millions of national-capital visitors. Montrose Park in historic old Georgetown is one of the real beauty spots of Washington. Chopawamsic Recreational Area, 35 miles south of Washington, is 14,300 acres in size and provides every kind of recreation for visitors.

FAMOUS STRUCTURES

The Executive Order of 1933, previously mentioned, assigned to the National Park Service for maintenance and operation a number of Federal buildings in the District of Columbia. There are too many to give an entire list, so we will mention only enough to give you an idea of the broad scope of the activities of the Park Service in the conservation of historic treasures in the District.

The Washington Monument—Most famous shaft in the land, erected in memory of George Washington. In 1833 a committee was formed, with Chief Justice John Marshall as chairman, to collect voluntary subscriptions for the monument, and work was begun in 1848. The original design was to have included a Greek circular colonnade around the base of the obelisk, surmounted by a chariot with

a huge figure of Washington, but unfortunately this idea was abandoned. Work on the structure progressed for six years and then stopped because there was no more money. The shaft was 152 feet high at that time, 1854. Nothing more was done for nearly a quarter of a century, and then the Government undertook to finish the monument. Before this could be done the foundations, found to be entirely inadequate, were widened to 126 feet square and deepened to 37 feet. The shaft was then constructed to a total height of 555 feet, but the structure was not completed until 1884, fifty-one years after Chief Justice Marshall's committee began work.

The White House—This famous structure was the first public building to be erected in Washington, the corner stone laid on October 13, 1792, in the presence of a distinguished company which, however, did not include General Washington. The site was selected by L'Enfant and approved by Washington. James Hoban, an Irishman who had resided for many years in Charleston, South Carolina, designed the building and superintended its original construction, its rebuilding after the burning by the British in 1814, and the later erection of the south and north porticos. The design is said to have been suggested by the Duke of Leinster's palace in Dublin. President and Mrs. Adams were the first occupants of the White House. They arrived in 1800, although the East Room and other portions of the building were not completed.

The Lincoln Memorial—Located at the western extremity of the Mall on the banks of the Potomac. The exterior is designed to symbolize the Union of the States. Thirty-six columns of Indiana limestone form a colonnade representing the 36 states of which the Union consisted at

the time of Lincoln's death, the frieze above bearing their names. On the marble walls above the colonnade are the names of the 48 states which now compose the Union. Inside the structure is a sanctuary containing three memorials to Abraham Lincoln: The marble statue facing the Monument and Capitol; Lincoln's Second Inaugural Address inscribed on the north wall; and the Gettysburg Address inscribed on the south wall. On the wall above the Inaugural Address is a canvas painting representing Reunion and Progress, and above the Gettysburg speech a similar painting depicting the Emancipation of a Race. Subordinate groups represent Civilization and Progress.

The Reflecting Pool—East of the Lincoln Memorial, the beautiful pool which reflects in its still waters the Lincoln Memorial at one end and the Washington Monument at the other. The pool is 1,992 feet long and 160 feet wide and is bordered by stately English elms.

Thomas Jefferson Memorial—Lying on the south bank of the Tidal Basin, this circular, colonnaded rotunda memorializes another great American, Thomas Jefferson. In the center of this structure is a 19 foot statue of our third President, and along the interior walls are four panels with inscriptions from writings of Jefferson.

Arlington Memorial Bridge—West of the Lincoln Memorial is the Arlington Memorial Bridge, dedicated to the memory of "those who have died in the military service of the country." With the exception of the Bascule draw span, it is of reinforced concrete construction. The granite below the springing line of the arches is from the Stone Mountain Quarry in North Carolina. The bridge has an overall length of 2,163 feet with a clear width between balustrades of 90 feet.

Lincoln Museum and House Where Lincoln Died—
There are two buildings on Tenth Street, in the heart of the business district of Washington, of intense historic interest because they were scenes of one of the great tragedies of American history. President Abraham Lincoln was shot by John Wilkes Booth as he sat in a box at the old Ford Theater on the evening of April 14, 1865. He was carried across the street to the Petersen House and died there the next morning. Today the first floor of the theater is occupied by the Lincoln Museum and contains a remarkable collection of Lincolniana. The death room of the great President, in the Petersen House, is open to visitors.

IX. NATIONAL PARKWAYS

A NATIONAL parkway is a combined park and highway, varying in width from 100 to 500 feet and in length from 10 to 500 miles. There may be parks of considerable size at intervals along a parkway, roughly compared to beads on a chain or charms on a bracelet.

Several states pioneered in parkway construction before the United States government undertook its first project. New York's famous Bronx River, Hutchinson River, Saw Mill and other parkways are widely known and so is the connecting Merritt Parkway in Connecticut which reaches almost to New Haven. These are comparable to the *autobahnen* of Germany which, though ostensibly built to facilitate motor travel and connect the great cities of that country, were high standard parkways. However, we have long known that they were really constructed for military purposes.

THE GEORGE WASHINGTON MEMORIAL PARKWAY

The George Washington Memorial Parkway begins on Columbia Island, at the western extremity of the beautiful Arlington Memorial Bridge, and extends approximately 15 miles along the Virginia shore of the Potomac River through the ancient town of Alexandria to Mount Vernon, home of George Washington. This is a superb scenic drive, winding through the rolling Virginia country with fine views of the historic Potomac River. Lovely as it is, its historic interest transcends its scenic values. You pass many

places of intense interest, such as the ruins of Abingdon House, originally the home of the Alexander family and later the birthplace of Nellie Custis, and Christ Church, where George Washington and Robert E. Lee worshiped, in Alexandria. Here also is Gadsby's Tavern where Washington recruited his first troops, the Carlyle and Ramsaye Houses, and the old Presbyterian Meeting House and churchyard where the unknown soldier of the American Revolution is buried. Below Alexandria is Wellington, the former home of Tobias Lear, secretarial aide to the first President. Fort Washington, designed by L'Enfant and still used as a military reservation, is across the river.

The parkway to Mount Vernon is the first unit to be completed of a great memorial project. When completed it will constitute one of the most interesting parkways in the world, extending from the lovely falls and gorge of the Potomac above Washington along the Virginia shore to Mount Vernon, and along the Maryland shore through Rock Creek Park and the National Capital to Fort Washington.

The Potomac Gorge also contains the old Chesapeake and Potomac Canal which has been acquired by Congress and added to the capital's park system. The parkways when built in the Gorge will parallel the old Canal.

THE COLONIAL PARKWAY

Before the parkway to Mount Vernon was completed, Congress authorized the National Park Service to acquire Jamestown Island, the battlefield of Yorktown, and a right-of-way for a parkway between these two historic places which are the sites of the beginning and the end of the

Colonial Period in American history.

The parkway is 500 feet in width and when completed will be about 20 miles in length. The section from Yorktown up the York River and through the woods to Williamsburg is finished. However, the war interrupted construction of the short connection to Jamestown, a part of which will restore the land which, in colonial days, made that settlement's location a peninsula instead of an island. The parkway underpasses the old city of Williamsburg in a short tunnel.

THE BLUE RIDGE PARKWAY

This is a scenic parkway which extends from the northern end of the Shenandoah National Park near Front Royal, Virginia, to the central part of the Great Smoky Mountains National Park in North Carolina and Tennessee. The route is high on the Blue Ridge Mountains, often following the summit of the range. There are several recreational areas along the parkway and many specially developed outlooks from which one may view the wide panoramas of mountains, canyons and forests. The parkway when completed will be about 480 miles in length, nearly 350 miles of which is already finished.

THE NATCHEZ TRACE PARKWAY

While this is a parkway between the old city of Natchez, Mississippi, and Nashville, Tennessee, it has been given the name of the old Indian trail which was an important route of travel in the early part of the nineteenth century.

The Natchez Trace Parkway when completed will be

about 450 miles in length. It not only traverses a region of natural beauty but makes accessible a number of historic sites of more than local significance.

NATIONAL PARKWAY PROJECTS

There are two other parkways which have been authorized by the United States Government but which have not been constructed as yet.

The Oglethorpe National Trail and Parkway is to be built in Georgia. Like the Natchez Trace Parkway, it will follow an old Indian trail and will give the traveler along its scenic route many opportunities to view sites of early settlements and events which were important in the history of the Southeast. The parkway will be about 110 miles in length.

The Olympic Parkway in the state of Washington will follow the coast of the Pacific and will be built to open vistas of the ocean and of the wooded and rocky headlands which distinguish that wilderness region. There will also be sections of the parkway that will feature the great forests of the Olympic coastal frontier, and there will be a connection to the Olympic National Park.

The Mississippi Parkway is another project which has the support of the Secretary of the Interior, but it has not yet been approved by Congress. It would be built, if authorized, on the west bank of the river, but the length and routes have not yet been determined.

X. NATIONAL PARK SERVICE PROJECTS

Everglades National Park, Florida—Authorized as a national park in 1934, this vast tropical area will occupy approximately 2,112,467 acres. Lying on the extreme southern end of Florida, the future park abounds in many rare birds, unusual fish, and dense mangrove forests of tremendous height.

Cumberland Gap National Historical Park, Kentucky-Tennessee-Virginia—This historic mountain pass was one of the great routes over which pioneers, among them Daniel Boone, moved westward during the Revolution and the several decades thereafter.

Saratoga National Historical Park, New York—Here the American forces under General Horatio Gates delivered a crushing blow to the British army under General Burgoyne in 1777. Burgoyne was forced to agree to complete surrender. This battle was the turning point of the Revolutionary War and is recognized as one of the most decisive conflicts in world history.

Atomic Bomb National Monument, New Mexico—This area will encompass the site where the first atomic bomb was tested early in 1945.

Fort Stanwix National Monument, New York—At this site, in 1768, the Iroquois Indians ceded large areas of New York and Pennsylvania to the British. This was also the scene of the unsuccessful siege of American troops by a British force during the Revolutionary War.

George Washington Carver National Monument, Missouri—Site of the birthplace of the great Negro scientist

and educator, George Washington Carver.

Harpers Ferry National Monument, West Virginia—Famous for the spectacular raid of John Brown as well as for the numerous military engagements fought here during the War between the States.

Palm Canyon National Monument, California—One of the largest areas of native palm trees in California. These trees are the so-called Washingtonia Palms.

Pioneer National Monument, Kentucky—Consists of four areas which memorialize the heroism of the American pioneers under Daniel Boone's leadership.

Monocacy National Military Park, Maryland—During the Confederate advance on Washington, led by General Jubal A. Early, a battle was fought here on July 9, 1864. The Federal troops under General Wallace were defeated.

Kennesaw Mountain National Battlefield Park, Georgia—Historic area in which occurred one of the two strong attacks made by Sherman on the Confederate positions during the Atlanta campaign. This was on June 27, 1864. This proposed park will include the Kennesaw Mountain National Battlefield Site.

Eutaw Springs National Battlefield Site, South Carolina—Scene of a Revolutionary War battle fought on September 8, 1781.

Coronado International Memorial, Arizona—This area will commemorate Coronado and his famous exploration in Mexico and the southwest United States in 1539-42.

Spanish War National Memorial, Florida—Proposed memorial to the American military and naval forces in the Spanish-American War. This memorial will be situated on Davis Island near Tampa.

XI. OTHER AREAS ADMINISTERED BY THE NATIONAL PARK SERVICE

THERE are several other groups of reservations over which the National Park Service has jurisdiction or may, under certain circumstances, join in supervision, protection, and maintenance activities. These will not be listed but merely referred to by their general classifications.

NATIONAL HISTORIC SITES NOT OWNED BY THE FEDERAL GOVERNMENT

In this group are six areas on which are famous old structures, owned by patriotic or religious associations and, in the case of Independence Hall, by the City of Philadelphia. The arrangements with the National Park Service, by which these lands and buildings become national historic sites entitled to U. S. Government recognition and aid, are made under a law enacted in 1935. This law was drawn to encourage the rescue from destruction and also to provide for future protection of important historic structures and their surrounding lands. This law is similar in many respects to English statutes under which conservation of historic sites is accomplished.

RECREATIONAL DEMONSTRATION AREAS

When the Civilian Conservation Corps was a part of the general relief organization of the Federal Government in the 1930s, large scale experiments in the establishment of

recreational areas for large cities in several states were undertaken. Lands of little value for agriculture or timber production were purchased and improved by boys of the Conservation Corps. Campsites, picnic grounds, water and sewage systems, and other facilities for group recreation were built. Some of these areas have been transferred to local government agencies, but the National Park Service still has eighteen with a total area of 183,985 acres.

NATIONAL RECREATIONAL AREAS

The Boulder Dam–Lake Mead region in Nevada and Arizona is the only national recreational area so far established by law. It embraces 1,680,133 acres of land and water. The recreational facilities of this vast territory are administered by the National Park Service in collaboration with the Bureau of Reclamation, the government agency which built the dam and power plants and now operates them in flood control and power production.

Other proposed national recreational areas of this type are the Denison Dam in Oklahoma and Texas and the Shasta Dam in California. There are grave dangers that too many of such assignments to the Park Service may divert its funds and the talents of its personnel from the primary functions of the Service as set forth in its enabling act. Extensive activity in this field is certainly one that should be reserved to local communities wherever possible.

NATIONAL PARK SERVICE RESERVATIONS

A LIST BY STATES

Alabama

Natchez Trace Parkway (also Mississippi and Tennessee)

Arizona

Grand Canyon National Park
Canyon de Chelly National Monument
Casa Grande National Monument
Chiricahua National Monument
Grand Canyon National Monument
Montezuma Castle National Monument
Navajo National Monument
Organ Pipe Cactus National Monument
Petrified Forest National Monument
Pipe Spring National Monument
Saguaro National Monument
Sunset Crater National Monument
Tonto National Monument
Tumacacori National Monument
Tuzigoot National Monument
Walnut Canyon National Monument
Wupatki National Monument
Coronado International Memorial (authorized)
Boulder Dam Recreational Area (also Nevada)

Arkansas

Hot Springs National Park

California

Kings Canyon National Park
 Lassen Volcanic National Park
 Sequoia National Park
 Yosemite National Park
 Cabrillo National Monument
 Channel Islands National Monument
 Death Valley National Monument (also Nevada)
 Devil Postpile National Monument
 Joshua Tree National Monument
 Lava Beds National Monument
 Muir Woods National Monument
 Palm Canyon National Monument (authorized)
 Pinnacles National Monument

Colorado

Mesa Verde National Park
 Rocky Mountain National Park
 Black Canyon of the Gunnison National Monument
 Colorado National Monument
 Dinosaur National Monument (also Utah)
 Great Sand Dunes National Monument
 Holy Cross National Monument
 Hovenweep National Monument (also Utah)
 Wheeler National Monument
 Yucca House National Monument

District of Columbia

House Where Lincoln Died
 Jefferson Memorial
 Lincoln Memorial
 Lincoln Museum
 Washington Monument

Battleground National Cemetery
The Park System of the District of Columbia
George Washington Memorial Parkway (also Virginia)

Florida

Everglades National Park (authorized)
Castillo de San Marcos National Monument
Fort Jefferson National Monument
Fort Matanzas National Monument
Santa Rosa Island National Monument
Spanish War National Memorial (authorized)

Georgia

Fort Frederica National Monument
Fort Pulaski National Monument
Ocmulgee National Monument
Chickamauga and Chattanooga National Military Park
(also Tennessee)
Atlanta Campaign Markers National Historic Site
Kennesaw Mountain National Battlefield Park (authorized)
Kennesaw Mountain National Battlefield Site
New Echota Marker National Memorial
Oglethorpe National Trail and Parkway (authorized)

Idaho

Yellowstone National Park (also Wyoming and Montana)
Craters of the Moon National Monument

Kentucky

Mammoth Cave National Park
Abraham Lincoln National Historical Park

Cumberland Gap National Historical Park (also Tennessee and Virginia) (authorized)
Pioneer National Monument (authorized)

Louisiana

Chalmette National Historical Park

Maine

Acadia National Park

Maryland

Fort McHenry National Monument
Monocacy National Military Park (authorized)
Antietam National Battlefield Site
Antietam National Cemetery

Massachusetts

Salem Maritime National Historic Site

Michigan

Isle Royale National Park

Minnesota

Pipestone National Monument

Mississippi

Ackia Battleground National Monument
Vicksburg National Military Park
Brices Cross Roads National Battlefield Site
Tupelo National Battlefield Site
Vicksburg National Cemetery
Natchez Trace Parkway (also Alabama and Tennessee)

Missouri

George Washington Carver National Monument (authorized)
Jefferson National Expansion Memorial

Montana

Glacier National Park
Yellowstone National Park (also Wyoming and Idaho)
Big Hole Battlefield National Monument
Custer Battlefield National Cemetery

Nebraska

Homestead National Monument of America
Scotts Bluff National Monument

Nevada

Death Valley National Monument (also California)
Lehman Caves National Monument
Boulder Dam Recreational Area (also Arizona)

New Jersey

Morristown National Historical Park

New Mexico

Carlsbad Caverns National Park
Atomic Bomb National Monument (authorized)
Aztec Ruins National Monument
Bandelier National Monument
Capulin Mountain National Monument
Chaco Canyon National Monument
El Morro National Monument
Gila Cliff Dwellings National Monument

Gran Quivira National Monument
White Sands National Monument

New York

Saratoga National Historical Park (authorized)
Father Millet Cross National Monument
Fort Stanwix National Monument (authorized)
Statue of Liberty National Monument
Federal Hall Memorial National Historic Site
Home of Franklin D. Roosevelt National Historic Site
Vanderbilt Mansion National Historic Site
White Plains National Battlefield Site

North Carolina

Great Smoky Mountains National Park (also Tennessee)
Guilford Courthouse National Military Park
Moores Creek National Military Park
Fort Raleigh National Historic Site
Kill Devil Hill National Memorial
Blue Ridge Parkway (also Virginia)

North Dakota

Verendrye National Monument

Ohio

Mound City Group National Monument
Perry's Victory & International Peace Memorial National Monument

Oklahoma

Platt National Park

Oregon

Crater Lake National Park
Oregon Caves National Monument

Pennsylvania

Gettysburg National Military Park
Hopewell Village National Historic Site
Old Philadelphia Customhouse National Historic Site
Fort Necessity National Battlefield Site
Gettysburg National Cemetery

South Carolina

Castle Pinckney National Monument
Kings Mountain National Military Park
Cowpens National Battlefield Site
Eutaw Springs National Battlefield Site (authorized)

South Dakota

Wind Cave National Park
Badlands National Monument
Fossil Cycad National Monument
Jewel Cave National Monument
Mount Rushmore National Memorial

Tennessee

Great Smoky Mountains National Park (also North
Carolina)
Cumberland Gap National Historical Park (also Ken-
tucky and Virginia) (authorized)
Andrew Johnson National Monument
Meriwether Lewis National Monument

Chickamauga and Chattanooga National Military Park
(also Georgia)

Fort Donelson National Military Park

Shiloh National Military Park

Stones River National Military Park

Camp Blount Tablets National Memorial

Fort Donelson National Cemetery

Shiloh National Cemetery

Stones River National Cemetery

Natchez Trace Parkway (also Mississippi and Alabama)

Texas

Big Bend National Park

Utah

Bryce Canyon National Park

Zion National Park

Arches National Monument

Capitol Reef National Monument

Cedar Breaks National Monument

Dinosaur National Monument (also Colorado)

Hovenweep National Monument (also Colorado)

Natural Bridges National Monument

Rainbow Bridge National Monument

Timpanogos Cave National Monument

Zion National Monument

Virginia

Shenandoah National Park

Colonial National Historical Park

Cumberland Gap National Historical Park (also Tennessee and Kentucky) (authorized)

Appomattox Courthouse National Monument
George Washington Birthplace National Monument
Fredericksburg and Spotsylvania County National Military Park
Petersburg National Military Park
Richmond National Battlefield Park
Manassus National Battlefield Park
Lee Mansion National Memorial
Fredericksburg National Cemetery
Poplar Grove National Cemetery
Yorktown National Cemetery
Blue Ridge Parkway (also North Carolina)
George Washington Memorial Parkway (also District of Columbia)

Washington

Mount Rainier National Park
Olympic National Park
Whitman National Monument
Olympic Parkway (authorized)

West Virginia

Harpers Ferry National Monument (authorized)

Wyoming

Grand Teton National Park
Yellowstone National Park (also Montana and Idaho)
Devils Tower National Monument
Fort Laramie National Monument
Jackson Hole National Monument
Shoshone Caverns National Monument

THE TERRITORIES

Alaska

Mount McKinley National Park
Glacier Bay National Monument
Katmai National Monument
Old Kasaan National Monument
Sitka National Monument

Hawaiian Islands

Hawaii National Park

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